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AN INTRODUCTION TO BUSINESS

A CASE BOOK



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AN INTRODUCTION TO BUSINESS

A CASE BOOK

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PREFACE

This book is designed to provide an elementary approach, by the case method, to the study of business. The authors have assumed that the prospective reader is relatively unfamiliar with the subject matter of business. The book is intended, therefore, especially for the use of students wishing to take an orientation course in the general field of business.

The use of the case method offsets the tendency of business instruction to be impractical and academic. No broad generalizations have been made; the reader is able to see the qualifying factors present in the actual business situations which the cases describe and to secure a sensible understanding of the point of each case.

The material presented in the cases constitutes a record of typical business operations, classified according to topics. Thus the book serves two purposes: (1) it acquaints the reader with the nature of ordinary business activities, and (2) it brings out some of the elementary principles of business administration. Questions have been placed at the end of each case to call attention to its significant features and to indicate the facts and principles which deserve to be emphasized.

There has been a recognized need for such a book as would fulfil the demand for instruction in the general, non-philosophical characteristics of business. In the hands of one who has already an acquaintance with business, the book will serve also for the more advanced study of principles of business economics.

Reading references in several standard textbooks have been given at the beginning of each chapter, since only the introduction to this book possesses the qualities of text material. Background which will add materially to the value of the study of most of the cases may be secured from the reference books noted. Most frequent reference has been made to Professor Henry P. Dutton's book, "Business Organization and Management." The

chapter organization of Professor Dutton's book was given weight in the division of the material presented in the present volume.

Dr. Homer B. Vanderblue, while Professor of Business Economics at Harvard University, suggested and stimulated the preparation of this book. To him, and to the several members of the faculty of the Harvard Graduate School of Business Administration who permitted the use of certain cases prepared by them, the authors make grateful acknowledgment. For the assistance of Miss Carolyn Stubbs in proof reading and indexing the volume, the authors also wish to express their appreciation.

Soldiers Field, September, 1929.

H. N. G.

C. I. G.

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CHAPTER I

INTRODUCTION

Definition of Business.—Business consists of the conduct, on a profit-seeking basis, of operations to supply the wants of people for material things and for certain kinds of services.¹ In the case of material things, such as food and automobiles, the first of these business operations is production, the second is conversion, and the third is distribution. Production is the extraction of raw materials from nature either by agricultural,² mining, lumbering, or fishing activities, and the utilization of water power. Conversion, or manufacturing, changes raw or semi-finished materials into a form more nearly ready for use or consumption. Distribution, or marketing, is the process of exchange by which goods are moved from producers and manufacturers through various types of mercantile firms and finally are made available for consumption.

In the case of services, such as transportation and entertainment, the business operations are similar to those which take place in the case of material things, with one difference: production does not consist of extraction from nature in the ordinary sense. Aside from this exception, however, it is not necessary to differentiate in any significant way between the study of the

¹ Professional services, such as those supplied by lawyers and doctors, are not included in the field of business.

² Agriculture commonly is not included in business. The reason seems to be historical, largely, rather than logical.

business of supplying people with material things and that of supplying them with services.

Finance is an essential part of business. Production, manufacturing, and distribution all require capital goods in the form of such things as buildings, machinery, and supplies, as well as capital in the form of money with which to pay labor and to make other necessary expenditures. The desire to secure a profit, however, is the principal explanation of the importance of financial considerations in the conduct of business operations. The usual measure of the success of business undertakings is ability to operate at a profit. The business executive prides himself on his ability so to marshal production, manufacturing, and distribution efforts that they will yield a financial gain. This profit motive in business is an important element of a capitalistic organization of society, and in large part provides the stimulus for economic progress.

Business Organization.—Business operations, it has been noted, consist of production, manufacturing, and marketing of goods and services, with the financial factor occupying a close relationship throughout. Business firms are organized essentially along these lines: the Island Creek Coal Company is an example of a firm engaged in mining; the General Electric Company is a manufacturing enterprise; Marshall, Field & Company is occupied chiefly in the field of distribution; the National City Bank of New York is a financial institution. Most business firms may be classified in these four groups: those that are essentially extractive (engaged in production), manufacturing, distributing, and financial.

Within a particular company there is a further subdivision of business operations. In a lumber company, for example, there is the purchase, ownership, and care of standing timber, the cutting of trees into logs, the operation of saw mills and finishing mills, the sale of the various products, and the supervision of financial matters involved in the processes. In a manufacturing enterprise, there is the purchase of materials, the making of semifinished or finished products, the sale of those products to other manufacturers, to distributors, or to consumers, and the financial administration of the combination of activities. In a company engaged in retailing, there is the purchase of the stock of goods, the operation of the store, the actual

selling of merchandise, and the administration of financial matters.

When the operations of companies engaged in producing the materials for a product, in manufacturing them into consumable articles, and in distributing them to consumers are placed in sequence, a summary picture of business operations is secured. In each stage of the journey of a product to the consumer, it is necessary for a firm to acquire the product, to change its form or to store it, and then to sell it, at a profit, to the firm conducting the next step in the process, or else to the ultimate consumer.

Since within a business enterprise many people, usually, are employed, there is need for general administration and supervision to insure unity and cohesion of activity. This is accomplished through placing at the head of the undertaking a president, perhaps with several direct assistants, responsible for enforcing general operating policies and for promoting the economic well-being of the enterprise. Subordinate officers, or executives, in turn, manage the specific phases of the business.

Thus, typically, in a company engaged in production, there is a superintendent of production, a sales manager, and a treasurer. In one engaged in manufacturing, typically, there is an officer in charge of purchasing, a factory superintendent, a sales manager, and a treasurer. In a company engaged in marketing, typically, there is a chief buyer, who may or may not act also as director of sales, and a treasurer. It may be observed from this description that the general classification of business firms according as they are engaged in production, manufacturing, distribution, or finance, is also a general descriptive classification of functions within a company.

Quite commonly a company combines two, three, or all four of the activities of production, manufacturing, distribution, and finance, either by expanding its own organization, or by acquiring established companies. Such integrations eliminate some of the steps made necessary when separate companies perform the several functions, and often tend to bring about reductions in costs as well as increased efficiency. The greater complexity of the resulting organization usually demands additional executive ability for its profitable administration, but otherwise no significant changes take place.

Executive Qualities in Business.—The conduct of business

operations implies the exercise of executive qualities. Land, buildings, machinery, raw materials, and labor are productive only when combined effectively under good management. The human element in business is of paramount importance. Some of the principal executive qualities are as follows:

1. The ability to comprehend and interpret the operations of the company as an organic whole, as well as by parts.

2. The ability to sense the existence of opportunities and of dangers sufficiently in advance to take advantage of them or to devise safeguards against them.

3. The ability to make well-balanced decisions on the basis of mature judgment.

4. The ability to think analytically, that is, to break down a puzzling problem into its elementary parts, and thus to understand the problem.

5. The ability to think projectively, that is, imaginatively, and thus to be resourceful in producing ideas regarding business situations. This quality probably is the most important of those possessed by executives.

6. The quality of personality which motivates others into action. This is the quality signified by the literal meaning of the word "executive."

These characteristics of successful business executives seldom are present in totality in any one man. The successes of leading business men, however, in nearly every instance may be traced to the possession of some or all of the executive qualities listed. Executive ability is an essential part of the effective administration of business operations.

Operating Organization of Business.—Within a business enterprise the nature of the organization of the laborers and executives is significant; the policies and the decisions of the latter must be carried out by the former in an effective way. In large undertakings it is especially necessary to have a well-arranged system of personnel organization.

Three factors determine the nature of the operating organization of a company: (1) the manner of delegating authority, (2) the nature of the work performed, and (3) the territory in which operations are conducted.

1. The exercise of authority by an individual, or by a small group of principal executives, over lesser executives and other employees is essential in almost all business undertakings. Such is the need in an army, and the type of organization used to secure it is called *military*, or *line*.³ It is best adapted to situations where the business operations conducted are relatively simple and repetitive, where standardization is an important factor, where labor must be disciplined, and where the careful carrying out of specifications is paramount.

2. Sometimes the nature of the work performed is so varied and specialized that the executive at the head of the line organization is unable to supervise all of its parts. To obviate this difficulty, he gathers around himself a staff of specialists, each of whom is in charge of a special function. The line of authority is maintained, but the advantages of specialization are secured. This is called the *line-and-staff* type of organization. It is the most common type in use in business.

3. If operations are conducted over a large area, frequently it is necessary to adjust the operating organization to provide for territorial divisions. The problem of the degree of centralization to be retained when divisional heads are set up is a difficult one to solve. On the one hand, the district manager may be the representative of the central office, with no local authority; on the other, he may have comprehensive and almost absolute authority over his territory. Commonly the problem is worked out by making the managers of divisions staff officers to a central office executive, and providing each with the functional organization required for the efficient performance of the work within his territory.

Organization of Business Ownership.—The organization of a business undertaking according to the nature of its ownership involves the study of individual proprietorships, partnerships, corporations, and holding companies. Recent tendencies have been toward the latter two forms.

Individual proprietorship is the simplest form of business organization. It is well adapted to small undertakings where the individual capital of the proprietor is sufficient to finance operations. Most farming activities are conducted by individ-

³ The army also makes use of a staff organization, so that to this extent the term "military" is not synonymous with "line."

uals in this way, and also a large number of small manufacturing and retail distribution undertakings. The individual proprietorship, however, has definite disadvantages: (a) generally, a single individual is unable to provide sufficient capital with which to finance his operations upon the scale that is most economical; (b) the individual has practically unlimited liability to his creditors—except for small amounts exempted by law in various of the states, everything he owns is subject to the claims of creditors in case he experiences financial difficulties; (c) the individual proprietorship lacks permanence, that is, the business ends with the death of the individual.

A partnership includes several individuals, and thus is adapted to larger undertakings. It permits larger aggregations of capital, but with the inclusion of a large number of partners the organization may become unwieldy. Specialization of function can be effected, especially if the partners possess different training and talents. Like the individual proprietorship, however, a partnership usually has unlimited liability, that is, the acts of any partner bind the other partners to the limit of their personal property. Also, like the individual proprietorship, the partnership lacks permanence; it ends with the withdrawal or death of any member. The basis for the organization is the partnership agreement, verbal or written—generally the latter—in which such matters as the division of profits and the distribution of assets, in case of dissolution, are set forth.

A corporation is a legal creation having many of the characteristics of an individual person. It permits the aggregation of large or small amounts of capital through the sale of shares. In general it is liable to creditors only up to the amount of its capital, though there are some exceptions, such as banks, whose stockholders are liable for twice the par value of their capital shares. The length of life of a corporation is dependent upon the terms of its charter, rather than upon the life of one or more persons. The basis for a corporation's existence is the charter granted by the state in which the undertaking is incorporated. The charter names the incorporators, the place of business, the amount of capital authorized, and the nature of the business activities to be undertaken.

In the United States the corporate form of business organization had its greatest period of growth in the middle and

latter part of the nineteenth century. It was adequate for most purposes, but as early as the period 1880-1890, intercorporation relationships were being formed. First, there were "pools" in which competing companies joined efforts in the conduct of certain business activities, and divided the profits upon a prearranged basis. Pooling was particularly common among competing railroads. Second, there were "gentlemen's agreements" among the executives of competing firms to maintain prices and to abide by specified arrangements in relation to the division of markets. Third, there were "trusts" in which competing companies deposited a part of their voting stock with trustees in order that the properties involved might be operated by the trustees to the mutual advantage of all, not only eliminating competition, but in many cases securing monopoly powers. This tendency of trusts to become monopolies resulted in the popular belief that all trusts were monopolistic. Legislative action was taken to stop pools, gentlemen's agreements, and trusts. The Sherman Anti-Trust Act (1890) summarized popular feeling by making illegal all actions in restraint of trade. Special statutes supplemented this Act, such as the Hepburn Act (1906), which applied especially to practices in railroading, and the Clayton Act (1914).

Finally, there developed a form of organization of the ownership of businesses which has been accepted as legal, and which has had a rapid growth—the holding company. The holding company is a corporation, all or part of whose business is the ownership and administration of other corporations. It is a control device commonly used to coordinate the operations of several corporations. Since a holding company usually needs to hold only a majority, or even less, of the stock of a company which it wishes to control, a holding company requires less capital than the outright purchase and merging of the properties would require. The holding company is used, also, to secure central coordination of companies engaged in dissimilar activities, and under conditions which make it advisable to maintain separate subsidiary corporations for purposes of efficient operations and for credit purposes.

Business Promotion.—The discussion of the subject of business thus far has assumed the existence of a business enterprise without inquiring into the details of how it began. The initial

promotion of business undertakings presents special considerations for study.

First, there is the determination of whether or not a business opportunity exists. Unless there is a demand for the product or service, the undertaking is not economically justified. There seems to be no end to the number and kind of wants people have; hence the number of promotional opportunities is infinite. The invention of a new product, such as a cotton-picking machine, the discovery of a new process, such as vulcanizing, the formulation of a new business policy, such as that of a manufacturer selling direct to retailers—these are all the beginnings of business promotions. Sometimes it means beginning something entirely new, sometimes renovating something old, and sometimes adapting something to a new purpose. Business genius frequently finds expression in creating some new idea, and many fortunes have been built as a result.

Second, the promoter must estimate costs, in order to anticipate whether the articles or services can be produced economically enough to promise a profit. This step includes the making of unit cost studies, and the testing of the market. In no other way can the success of the undertaking be gaged. Unfounded optimism explains the existence of many large factories built to produce new kinds of articles but which never have been used because of an uneconomic set-up.

Third, the promoter must “promote” the undertaking, that is, secure financial support and start the wheels of operation turning. This is the special function of the promoter. He can secure ideas as to what to promote from inventors and others, he can have engineers and research agencies make preliminary surveys, but he, himself, must motivate the undertaking into action. Sometimes the task is difficult; doubt as to success makes it hard to secure funds; the recruiting of executives and workers presents problems. The promoter commonly takes his compensation in the form of stock, the value of which is dependent upon the success of the venture.

Business Finance.—Business operations require two kinds of capital: (1) fixed capital, for investment in land, buildings, machinery, tools, and supplies; and (2) working capital, for financing raw materials, finished inventories, sales, and for paying salaries and wages. The administration of the finances of

a business undertaking involves the initial provision of the necessary capital, the control of operations in order to avoid financial difficulties, and the conduct of operations to secure the largest possible net profit.

Fixed capital must come from sources which do not expect early repayment, for buildings and machinery commonly must be used at least several years before they have produced enough to pay for themselves. The savings of the individual proprietor or of the partners, and the funds received from the sale of shares in corporations, are well adapted to investment in fixed assets. In addition, mortgage loans, maturing over a period of years or at the end of a period of years, may be secured upon real estate and other fixed assets, up to about half of the value of those assets. This arrangement permits the use of capital stock to finance the remainder of the fixed assets and to provide working capital for normal requirements. Purchasers of capital stock become, in effect, part owners in the enterprise; they bear the principal financial risk involved. Commonly this stock is of two kinds: (a) preferred, which in most cases bears a fixed dividend rate, and which, after the claims of outside creditors, has first call upon the earnings of the company and upon the assets of the company in case of dissolution; and (b) common, which usually possesses sole voting rights in the company, and which may receive dividends out of the earnings which remain after mortgage bond interest and preferred stock interest have been paid. In summary, then, mortgage bonds and preferred stock commonly are used to secure capital to finance fixed assets, and common stock is used to finance ordinary working capital requirements.

Frequently it is inadvisable to raise capital by selling mortgage bonds, as the business venture may be hazardous or there may be insufficient fixed assets to serve as security for a mortgage loan. In a risky undertaking, earnings from which to pay bond interest may not be made in all years. If this interest is not paid, legal action may be taken to sell the assets serving as security, in order to secure funds with which to pay off the mortgage and the defaulted interest. It is only in stable businesses with records of good earnings, that mortgage loans can be made at economical interest rates.

Seasonal demands for money by a business undertaking

are best met by borrowing upon a short-time basis, usually from a bank. As Christmas approaches, for example, a retail-store owner might wish to purchase more goods than at other seasons, in order to meet the heavy demands of the holiday trade. He is justified in going to his bank for a loan with which to make the extra purchases. In January or February, he should have secured payment from customers for the holiday goods sold, and he should be in a position to repay the bank the amount of the loan.

The control of business operations begins with the keeping of accounts. Through them the exact status of finances can be determined and the trend of operations be observed. Periodic balance sheets show the assets, the debts to creditors, and the net worth of the enterprise. Income statements give a dynamic picture of operations in relation to their profitability. Balance sheets and income statements are two of the summary accounting records of first importance to financial management.

The knowledge of important details secured from the accounting records is part of the basis for the determination of financial policies. More or less capital might be desirable, costs might be found to be increasing, prices might prove to be checking sales, credit terms might be using too much capital in financing sales, inventories might be too large. Experience proves what financial policies are best, and frequent reference to see what success is being attained is important. Accounting, as well as statistical, records also are essential to the formulation of sound operating policies for production, manufacturing, and marketing activities.

The success of present operations is dependent upon the immediate future, whether it is production, manufacturing, or marketing. It is necessary, accordingly, to forecast business conditions in order to conduct operations most advantageously. The coal-mine operator determines the scale of his operations upon the basis of his prospective sales. The manufacturer and distributor do likewise. Business forecasting is not an exact science, but definite advantages can be secured from it. Sales expectations generally are the beginning point of controlling business operations. Prospective sales may be estimated upon the basis of sales in the past and upon the basis of business

conditions which affect those sales. For example, the sales of farm implements depend largely upon the prices of farm products during the previous season. Sometimes an index can be found which customarily moves in advance of the sales of a particular company and which can be used to forecast the sales of that company.

Once the sales forecast has been made, production schedules can be determined, materials can be purchased in the proper quantity, labor can be employed, and other essential arrangements can be made. The net result is the precise control of operations, and the administration of the undertaking for the greatest profit.

Industrial Management.—While financial management involves the decisions of the executives of a company regarding matters of general significance to the company, that is, the volume and profitability of operations, industrial management includes more especially the administration of production and manufacturing activities. Generally there is an engineering or technical element in industrial management. In industries where the technical aspects of production or manufacturing are important, the chief executive commonly is a specialist in those activities. Such was the case in the automobile industry during the first 15 or 20 years of its life. In industries where distribution is the key problem, a salesman is generally the chief executive.

The executive in charge of production or manufacturing operations must arrange to produce the articles to be sold by the company in the amounts required, at the time required, with the quality desired, and at as low cost as possible. The plant or place of operations must be located economically with reference to materials, markets, labor, power, transportation, and weather. In addition, the superintendent of operations must have precise control over every aspect of the production or manufacturing processes. A knowledge of costs permits the determination of selling prices which will yield a profit, and, *vice versa*, makes it possible to determine the profitability of each product. The control of inventories of materials, finished goods, and supplies, prevents ordering in quantities that are more than sufficient, and insures against interruption of operations because of an insufficient quantity. Knowledge of the

time required to perform various operations permits the scheduling of orders so that they may be delivered when promised. When for specific operations their costs and the times necessary for conducting them are known, it is possible to determine production standards against which performance can be checked. The analysis of the work performed by laborers frequently results in the elimination of waste motions, and permits the establishment of a basis upon which to measure the performance, and to determine the wages of the individual laborer.

These control devices, sometimes termed scientific management methods, are of value to business executives engaged in the direction of complicated business operations. Methods are so well developed that even in the largest undertakings the chief executive is able to have before him each day an index of the operations of the previous day, together with an explanation of any change that might have taken place. Operations can be conducted at a distance from the executive offices without blurring the control of the central office over those operations. Scientific management magnifies the powers of business executives and enables them to maintain minute control over huge operations.

Labor management is perhaps the principal element in industrial engineering. In this field there is no substitute for the human quality needed to maintain satisfactory labor relations. The production or manufacturing engineer must have a quality of leadership which will enable him to get work out of laborers and to secure their good will. Special methods of paying laborers so that there will be an incentive for work of large volume and of high quality have been found to be of distinct value in labor management. The payment of bonuses, the use of profit-sharing systems, the ownership of stock in a company by its employees are additional methods of maintaining satisfactory labor relations. The policy of the employing, capitalistic party to the labor contract must be characterized by fair dealing and sympathetic consideration.

Distribution.—In the earliest stages of business development, goods were produced by an individual for himself and the members of his family. This "household" period in economic history made small use of markets. With the increasing division of labor, however, individuals produced more of par-

ticular articles than they or their families could consume, and less or not enough of certain other articles than was sufficient to support them. Markets arose and the distribution function became an important part of the business system. At first, the markets were local in scope and relatively few articles were handled in them; wants were less numerous than at present. Trading developed with the improvement in transportation methods, market areas grew, production and manufacturing units increased in size to keep pace with the larger markets. In some cases the competition for markets became the leading problem of businesses, and a natural emphasis upon distribution resulted. Several undertakings primarily of a distribution nature have acquired factories to fill certain of their needs.

This evolution of the distribution system has been accompanied by shifts in the trade channels used, by the rise of chain-store organizations, and by improvements in the technique of sales management and sales promotion. There has been a revolution in marketing methods almost as pronounced as the one in mechanical methods. An essential characteristic of merchandising, furthermore, seems to be the fact that new ideas are continually driving out the old.

The time-honored channels through which a manufactured product is distributed are the independent wholesaler and the independent retailer, with brokers or commission men frequently assisting in the process. In actual practice, however, there are increasingly numerous cases in which this traditional marketing sequence is no longer followed. In many instances, manufacturers have undertaken to perform the wholesaler's functions; in other instances, retailers, especially those operating chains of stores, have become large enough to deal directly with the manufacturer. The specialty wholesaler, that is, a wholesaler handling only one line, such as draperies, has arisen, and has been able to hold his own. The general wholesaler, however, especially the wholesale grocer, has been in a difficult position. Independent retailers have been confronted with chain stores and with manufacturers' retail agencies. Commodity exchanges have arisen for the handling of staple goods in bulk. The result has been that there is no standard channel of distribution.

In some cases the marketing process has been complicated;

in others it has been simplified. The several functions of placing goods in consumer packages, of storing goods, of giving customers a full line from which to choose, and other functions of middlemen have been assumed by different persons at different times.

The rise of the chain store has been phenomenal. Its success is based upon the buying power it is able to exercise on account of its great volume, and upon its ability to standardize the most effective selling methods discovered by careful research and experiment. In almost every case a chain-store company buys directly from manufacturers or producers, and at prices lower than smaller purchasers are able to secure. In addition, certain administrative costs are less, since a chain-store organization has only a few highly paid executives.

For most types of business, advertising has been a principal tool of sales promotion. The determination of the marketing appeals to use in pushing the sales of a product or a service is an important business problem. The presentation of those appeals by means of advertising is a technical and specialized field. The measurement of the effectiveness of advertising efforts is desirable, although frequently difficult or impossible of achievement.

Improvements in the technique of sales management have been features of the "marketing era" which recently has characterized many industries. Sales forecasting, coupled with the coordination of sales and production, has provided an intelligent basis for the making of decisions. Sales analyses have enabled executives to determine the profitability of sales efforts. Sales forces have been organized, disciplined, and trained for the particular problems of a company, have been given quotas for the measurement of performance, and have been paid in ways to provide incentive to the salesmen to do their best.

Progress in finding more economical and efficient methods has been slower in the field of marketing than in technical production and manufacturing. Costs of production have been reduced almost continuously in a majority of industries, but expenses of marketing have tended to rise. The task of finding more economical ways for performing the distributive function is a major problem for analysis.

An outstanding feature of current business is the conscious

recognition, on the part of business leaders, of the need for fair dealing in all the complicated relationships between buyers and sellers, between employers and employees, and, in general, between business organizations and other elements in the social structure. Business has begun to accept its social responsibilities; business transactions are being conducted upon a continuously rising level.

PART I

GENERAL BUSINESS ORGANIZATION

CHAPTER II

A PICTURE OF TYPICAL BUSINESS ACTIVITIES ¹

1. RAINIER LUMBER MILLS ²

Organization of a Manufacturing Enterprise

The Rainier Lumber Mills was one of the larger companies operating in the Douglas fir lumber areas of the Pacific Northwest. It owned or controlled extensive timber properties, and owned and operated five logging camps, four lumber mills, four shingle mills, a sash and door factory, a box factory, and 90 miles of railroad. In addition to these production activities, the company distributed its products to retail lumber yards in all parts of the United States through its own sales agents.

The prosperity of the lumber industry customarily is affected by the volume of building. After 1923, however, in spite of unusual building activity, the profits of lumber companies in the Pacific Northwest were very low. The Rainier Lumber Mills had been more successful than most of its competitors, but it was dissatisfied with the trend affairs had taken. The president wished to review the operations of the company in order to discover if ways existed by means of which the situation might be improved.

The activities of the Rainier Lumber Mills were of three kinds: logging, milling, and distribution. The organization of functions in the company is shown graphically in Exhibit 1.

The production division of the lumber industry comprised four fairly distinct divisions: (1) the ownership of timber, (2) the logging of timber, (3) the milling of lumber, and (4) the

¹ DUTTON, pp. 22-41.

² This is a fictitious name. Throughout this volume the names of many of the companies upon which cases have been based are fictitious; the management, in each instance, wished the identity of its company to be disguised.

conversion of some finished lumber into sashes, doors, shooks, and other products. These functions were performed sometimes by the same and sometimes by separate companies. The Rainier Lumber Mills carried on all four activities.

The company owned or controlled 4,100,000,000 feet of timber; this supply was estimated to be sufficient for 15 or 20 years at a normal rate of operation. An additional 1,500,000,000 feet of timber had been acquired under what was known as "cutting contracts." These contracts were on a "pay-as-you-cut" basis; this involved the cutting of a monthly minimum amount, for

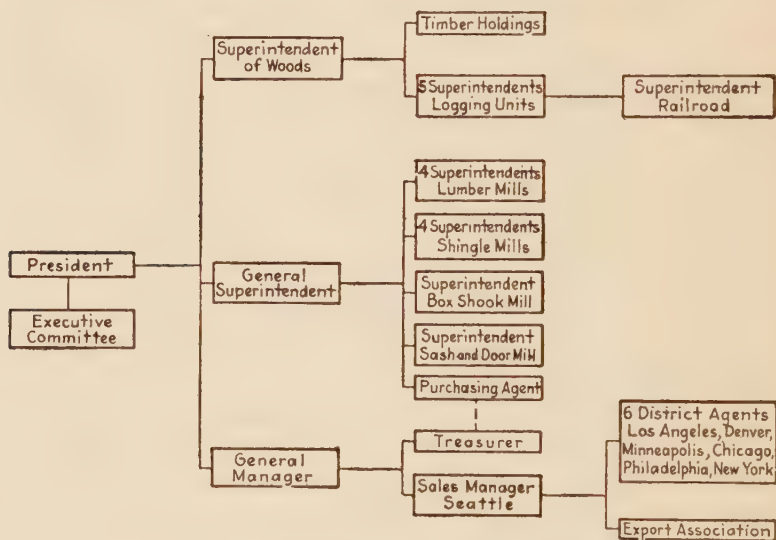


EXHIBIT 1.—Organization chart, Rainier Lumber Mills.

which a stated price per thousand feet of timber was paid as cut. This method of purchase permitted savings in the amount of capital invested in the original purchase, and the avoidance of heavy obligations. The original owner continued to hold title to the standing timber.

The holdings had been purchased at advantageous times and represented a good investment, though perhaps not as favorable a one as that enjoyed by pioneers in the industry, who had paid comparatively little for stumpage held. Taxes and interest were important items in timber costs; taxes were calculated upon the

value of the standing timber.³ Both taxes and interest were charged off as current annual expenditures, and were not added to the cost of the timber in a cumulative sense.

The company carried on logging operations by separate units, located strategically with reference to stumpage and transportation facilities. The trees were felled by expert loggers, stripped of branches, sawed into lengths, and skidded to transportation facilities. The standing timber controlled by the Rainier Lumber Mills was in an area where snow was neither an aid nor a hindrance in logging. In the yellow and the white pine areas of the Pacific Northwest most of the logging was done in the winter, because logs could be hauled out on sleds. The Rainier Lumber Mills built railways into the timber, and transported the logs in cars to the mill ponds or to Puget Sound, where they were rafted to the mill.

Milling operations were subdivided into four steps:

1. Sawing logs into rough lumber of dimensions more or less standard, according to the sizes of the trees.
2. Resawing the lumber to standard dimensions, when necessary.
3. Kiln-drying the lumber. The upper grades of lumber such as flooring and door stock, were kiln-dried, as it was important that this lumber should not shrink when put in place. The process took the place of the slower weather seasoning.
4. Planing, or finishing, the rough lumber.

The process was continuous. A rough log was placed upon a carriage at one end of the mill, and a finished and dried molding, for example, came out at the other end. These milling operations were conducted in especially constructed mills equipped with specialized saws and other machinery.

Most of the lumber was sold as it came from the mills, either in rough or in finished form.⁴ Another step was added in some

³ Insurance was not included as a carrying charge; standing timber was not insured. In the industry in general this risk was carried by the owner. The rates for insurance were prohibitive on account of conflagration danger.

⁴ Exports to Japan were made in the form of "Jap squares"—large, unfinished, squared timbers. The Japanese tariff, in order to protect the local hand-sawing and planing industry, was drawn up so as to make it profitable for American lumber companies to ship only these squares. Great quantities of them were exported each year.

cases, however, in making standard measurement products such as shooks, sashes, doors, and—a new departure—ready-cut structural shapes. The manufacture of these products involved distinct processes, requiring different mills, equipment, and labor.

The average amounts of the various costs allocated to a thousand feet of kiln-dried dressed lumber, as determined by the West Coast Lumbermen's Association, were as follows:

COSTS PER THOUSAND FEET AT THE MILL FOR KILN-DRIED DRESSED LUMBER

Logging (Woods cost, basis log scale)

Stumpage	\$ 3.27
Rigging Ahead	0.27
Falling and Bucking	1.30
Yarding and Loading.....	2.39
Wire Rope	0.32
Railroad	1.68
Spur Tracks	0.97

Total Logging \$10.20

Fixed Charges

Depreciation	\$ 0.68
Administrative and General Expense.....	\$ 0.92

Cost Log Delivered at Mill..... \$11.80

Manufacturing (Milling costs, basis board measure)

Pond and Log Yard.....	\$ 0.10
Saw Mill	2.46
Green Sorter	0.59
Dry Kiln	0.98
Transportation (yard)	0.61
Dry Sorter	0.49
Finish Shed	0.33
Yard—General Expense	0.31
Planing Mill	1.25

Conversion Cost Manufacturing..... \$ 7.12

Fixed Charges

Depreciation	\$ 0.75
Administrative and General Expense.....	1.32

Manufacturing Expense \$ 9.19

Cost Log Milled \$11.80 including board measure	
overrun 3.6%	\$11.38
<hr/>	
Production Cost	\$20.57
Shipping Cost	0.84
Selling Cost	0.85
<hr/>	
F. O. B. Mill Cost.....	\$22.26

NOTE.—This class of product represented approximately 30% of the log; the balance of the log was made up into cheaper grades of lumber, with costs ranging from \$20 to \$22 per thousand feet.

The Rainier Lumber Mills, as indicated by this review, conducted varied operations. It could make sales at any stage—sales of timber, of logs, of unfinished lumber, of finished lumber, and of lumber products. The company concentrated its attention upon lumber, sashes, doors, shingles, and shooks. It was utilizing for by-products to an increasing extent, however, its waste materials, such as slabs, trimmings, and sawdust, which formerly it had sent to the burner. Sawdust was sold to neighboring steam plants, such as canneries and condensed-milk factories. Successful experiments had been made by the company in the manufacture of paper from pulpwood ground from its hemlock, spruce, and fir waste slabs. Lumber companies were joining more and more with pulp and paper interests in the utilization of waste slabs, and although this phase of the industry was still in its infancy, rapid expansion was expected. The company also had increased its production of remanufactured products, such as boxes, door and window frames, and sashes, by utilizing a larger percentage of the log than formerly.

The production activities of the Rainier Lumber Mills described in the preceding paragraphs were of two kinds: logging and milling. A superintendent of woods was in charge of the former, and a general superintendent in charge of the latter. The woods superintendent, who was also designated assistant to the president, attended to matters relating to the timber holdings of the company, including the acquisition of new stumpage, the care of standing timber, the determination of the areas to be logged, the sale of logged-off lands, and, most important, the operation of the logging camps. The principal duty of the general superintendent was the supervision of the 10 milling units shown in Exhibit 1, page 20.

Each of the five logging camps was directed by a resident superintendent who was responsible to the woods superintendent. It was the duty of the resident superintendent to get out the logs ordered within a specified time, and load them ready for shipment. This involved hiring the various kinds of logging laborers, maintaining machinery and equipment, and keeping up the camp. The railroad was used for logging purposes exclusively. Its operation was directed by a superintendent responsible to the woods superintendent, but who worked in close relation to the resident superintendents of the two logging units served.

The four lumber mills, the four shingle mills, the sash and door factory, and the box shook mill were managed with organizations much the same as those of the logging camps; a superintendent technically trained was in charge of each unit, and was responsible to the general superintendent. The volume of operations was governed by the general superintendent, whose production policy was determined in conference with the sales manager, or in conference with the executive committee.

The purchasing department served both the logging and the milling divisions of the operations of the company. The manager of the department was responsible directly to the general superintendent. The principal items purchased were equipment and supplies for the logging, transportation, and milling activities, and included the food and other things necessary to maintain the camps and mill towns.

The office of general manager was held by the president. Most lumber companies had emphasized the production end of the business and had allowed sales largely to take care of themselves. This tendency had been foreseen, and the Rainier Lumber Mills probably owed much of its position in the industry to the fact that at an early date it had undertaken aggressive sales methods, and that the chief executive was in direct charge of distribution activities.

Domestic sales constituted about 90% of the business of the company. They were supervised by a sales manager responsible to the general manager. About half of the volume was handled directly from the main sales office in Seattle. The balance was divided among the district sales offices located in Los Angeles, Denver, Minneapolis, Chicago, Philadelphia, and New York.

The customers to whom sales were made were lumber retailers, frequently chain, lumber-yard organizations, and occasionally large industrial companies or railroads. Credits were supervised in the Seattle office by the treasurer.

Export sales were made by the sales manager through an export association organized under the Webb-Pomerene Act ⁵ to handle the lumber sales of its 100 member companies in foreign countries. A brokerage fee was charged by the association in return for which collections were guaranteed and sales development activities were carried on.

A traffic clerk, responsible to the sales manager, attended to the routine of ordering and billing cars, and of checking freight bills. The sales manager supervised the relations of the company with railroad and steamship companies, the filing of claims, the routing of shipments, and efforts to secure more favorable rates.

The treasurer supervised the administrative routine activities of the company. These included the pay roll, the keeping of books, the maintenance of insurance coverage, the making of collections, attention to borrowing relations with banks, the extension of credit to customers, and the exercise of financial supervision over the purchasing department. The treasurer also prepared reports and made special studies for the executive committee.

Questions

1. What are the important divisions of the operations of the Rainier Lumber Mills?

2. What are the duties of the principal officers of the company?

3. Can the activities of the manufacturing companies with which you are acquainted be grouped into divisions similar to those of the Rainier Lumber Mills?

4. Does the fact that a company is engaged in manufacturing signify that the selling of the products made is not impor-

⁵ This was an act of Congress which permitted combinations of exporters in order that they might deal effectively with foreign purchasers. Except for this act, such combinations might be considered violations of the Sherman Anti-trust Act.

tant? What was the reason, in this connection, for the operations of the Rainier Lumber Mills being more profitable than those of most of its competitors?

2. JAMES ANDERSON DEPARTMENT STORE

Organization of a Merchandising Enterprise

The James Anderson Department Store, located in a large eastern city, had annual sales of about \$20,000,000. The company had been highly successful in its operations, but its rapid growth had brought about a condition in the organization of the personnel that was not satisfactory. The buyers in each department had full control not only of the purchasing in their respective departments, but also of selling operations. The company proposed to remove the supervision of selling activities from the authority of the buyers, and to organize a separate division in the store personnel to take charge of all sales policies and operations. The management was confident that continued success depended upon sound sales policies and good service to customers, rather than primarily upon the shrewd exercise of the store's large buying power.

The principal departments operated by the James Anderson Department Store were as follows:

A. Dry-goods Section:

1. Silks
2. Velvets
3. Woolen dress-goods
4. Wash dress-goods
5. Linens
6. Sheetings, blankets, and comforters
7. Laces, trimmings, and embroideries
8. Neckwear and veilings
9. Ribbons

B. Small-wares Section:

10. Notions
11. Toilet articles and drugs
12. Handkerchiefs
13. Silverware and jewelry
14. Leather goods
15. Umbrellas, parasols, and canes
16. Art needlework and art goods

C. Men's- and Boys'-wear Section:

- 17. Men's clothing
- 18. Men's furnishings
- 19. Boys' clothing
- 20. Boys' furnishings

D. Women's and Misses' Ready-to-wear Section:

- 21. Coats
- 22. Suits
- 23. Skirts
- 24. Dresses
- 25. Misses' wear
- 26. Furs
- 27. Fur storage
- 28. Juniors' and girls' coats
- 29. Juniors' and girls' suits
- 30. Juniors' and girls' skirts
- 31. Juniors' and girls' dresses
- 32. Waists and blouses
- 33. Sweaters and knit goods
- 34. Sports wear

E. Women's Ready-to-wear Accessories Section:

- 35. Millinery
- 36. Gloves
- 37. Corsets and brassieres
- 38. Hosiery
- 39. Knit underwear
- 40. Muslin underwear
- 41. Infants' wear
- 42. Petticoats
- 43. Negligees
- 44. Aprons and house dresses

F. Shoe Section:

- 45. Women's shoes
- 46. Children's shoes
- 47. Men's and boys' shoes

G. Home-furnishings Section:

- 48. Furniture
- 49. Beds, mattresses, and springs
- 50. Rugs
- 51. Carpets
- 52. Linoleums and mattings
- 53. Draperies
- 54. Lamps and shades
- 55. Art wares

- 56. Wall paper
- 57. China and glassware
- 58. House furnishings
- 59. Pictures and picture framing
- 60. Sewing machines
- 61. Electrical equipment

H. Miscellaneous Section:

- 62. Toys
- 63. Sporting goods
- 64. Camera supplies
- 65. Luggage
- 66. Automobile supplies
- 67. Books and magazines
- 68. Stationery
- 69. Talking machines
- 70. Records and rolls
- 71. Pianos
- 72. Sheet music
- 73. Washing machines
- 74. Vacuum cleaners
- 75. Optician and optical goods
- 76. Candy
- 77. Restaurant
- 78. Soda fountain

I. Basement-store Section:

- 79. Ready-to-wear coats, suits, skirts, dresses, waists
- 80. Ready-to-wear accessories
- 81. Millinery
- 82. Shoes
- 83. Draperies

The administrative organization of the James Anderson Department Store is shown graphically in Exhibit 1.

The organization chart shows three divisions: merchandise, finance, and service. The merchandise pyramid was supervised by a general merchandise manager, who was a vice president of the company and a member of the firm. He was responsible for the administration of sales policies, and for making the store earn a satisfactory profit. He was assisted by a publicity manager who attended to advertising and displays, by a manager of the main store, by a manager of the basement store, and by a New York merchandise manager, who aided in the buying activities of the company.

The manager of the main store supervised the 9 divisional

merchandise managers. Each divisional manager had charge of from 1 to 20 departments. A department buyer, responsible to his divisional manager, directed each department. Each department was operated as an individual unit, although its policies had to conform to the general policies of the store. An

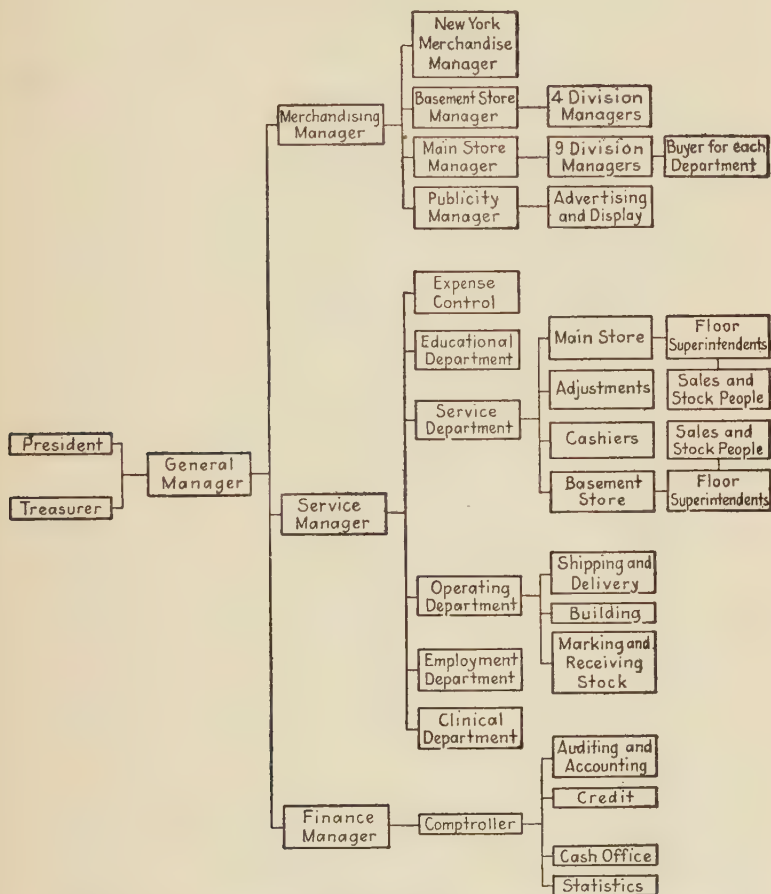


EXHIBIT 1.—Organization chart, James Anderson Department Store.

important function of the divisional managers was to secure coordination among departments. In addition these managers approved mark-downs, aided their buyers in planning sales and expenses for each season, and assisted the buyers in maintaining stocks with the proper assortment of prices, sizes, styles, and

colors. The divisional merchandise managers also did some buying for their departments.

Each buyer, usually with the aid of an assistant, purchased and priced all merchandise for his one or more departments, and was responsible for the sale and display of the goods. He inspected all goods on arrival, and arranged with the publicity manager for newspaper advertising and window displays. The buyer made notes of the important selling points for use in preparing advertisements, and instructed salespeople in ways to display goods and to sell.

The service division included the service, employment, educational, operating, expense control,⁶ and clinical⁷ departments. The operating department included the operation of the building and the employment of the store's detective force and night watchmen. The service department was the most important part of the service division. It handled the merchandise after it had been received from the receiving and marking room, and it was responsible for service to customers. In the service department were included the 32 floor superintendents, the floorwalkers, cashiers, inspectors of sold merchandise, and stock-room employees.

The floor superintendents, in theory, were coordinate in authority with the buyers. The floor superintendent saw that salespeople were at work on time and that the merchandise was on the counters when the store opened. Sometimes he adjusted customers' complaints and authorized the acceptance of returned goods, although generally the buyer did this work. The fact that the buyer usually received a higher salary than the floor superintendent tended to disturb the theoretical coordinate ranking of the two.

The finance, or control, division was responsible for accounting, auditing, statistical work, credits and collections, insurance, and similar activities. All charge sales and charge accounts were supervised by the credit department. Whenever a customer wished to have merchandise charged, the salesperson had

⁶ The expense-control department allocated the various costs of operating the store to the different departments in order to determine the profitability of each.

⁷ The clinical department consisted of a doctor and a nurse for the use of the employees of the company.

to call up the credit authorization office and receive permission to make the charge.

The preceding paragraphs provide a description of the operations and the personnel organization of the James Anderson Department Store. The only cause of dissatisfaction arose out of the fact that it seemed impossible for a buyer to attend to all the duties connected with the actual purchasing of merchandise and also to give sufficient time to selling. It had been maintained that a buyer needed to be in close contact with the customers of the store, and that this contact could be obtained only by giving the buyer full responsibility for disposing of the merchandise. Experience had shown, however, that buyers tended to concentrate on their buying duties and to spend more and more time in the markets. Under these circumstances they could not give much time to the actual work of selling the merchandise, and so did not come in close contact with customers.

To meet this situation a new plan of organization was suggested, comprising four main divisions—buying, selling, service, and finance. The buying division, in conjunction with the selling division, would determine the amounts and kinds of merchandise to be purchased. The chief function of the buyers would be to buy merchandise and have it delivered as promised. Relieved of the detailed responsibilities of selling merchandise, it was expected that a buyer would be able to spend a large part of his time in the markets, and thus be in a position to deal with merchandise sources and secure the most advantageous terms.

The selling division would be headed by a general executive, known as the sales manager, on a coordinate plane of authority with the heads of the other main divisions. This division would receive the merchandise, mark it in accordance with prices set by the buyers, store it in reserve stock, if necessary, and send it to forward stock as needed. Floor superintendents, representing the selling division on the selling floors, would take care of all relations with the public in the work of selling and in the adjustment of complaints. They would have direct supervision over all salespeople, and would have full authority, in cooperation with the employment office, in hiring, transferring, and discharging them. The publicity department, in the new

organization, was to be made subordinate to the selling division; no advertising duties were to be given to the buyers.

Thus the selling and buying functions would be separated throughout the store, the former under the control of the sales manager, and the latter supervised by the head buyer. Each department would continue to remain a separate unit with the buyer and floor superintendent having coordinate authority. The management planned to secure higher-salaried men than it had had in the past for floor superintendents, and to place them as nearly as possible on a par with the buyers. As a result it was expected that the buyers no longer would be able to dominate the departments as they had done previously.

The service division and the finance division, under the new plan of organization, were to remain substantially as they had been, and as shown in Exhibit 1.

Questions

1. Discuss the advisability of removing the supervision of selling activities from the authority of the buyers, and the organization of a separate division to take charge of all sales policies and operations.

2. What are the principal divisions of the executive administration of the James Anderson Department Store?

3. In what ways, if any, do you think the following kinds of stores would differ from the department store described? (a) grocery, (b) hardware, (c) clothing.

4. What changes, if any, should have been made in the organization of the James Anderson Department Store?

3. WILLIAM PITT BANK

Organization of a Commercial Bank

The William Pitt Bank was one of the three largest commercial banks in the state of Pennsylvania. Its operations were typical of most large institutions of its kind, and included a general banking business, personal and corporate trust services, a foreign department, and an investment banking division. An executive vice president exercised general supervision over these various operations. With the increasing size of the bank and

with the need for greater specialization of functions, however, the removal of the William Pitt Corporation, which conducted the investment banking⁸ activities of the bank, to a separate division responsible directly to the president, was being considered.

The organization of the various functions of the William Pitt Bank is shown graphically in Exhibit 1. The chart indicates that two officers reported directly to the president: the senior (executive) vice president, and the head of the business extension (new business) division. The former officer supervised the operating sections of the bank, which consisted of the loan and investment, industrial, foreign, trust, administrative, and auditing divisions. This senior vice president was assisted in his work by a financial control committee, of which he was chairman, composed of the principal officers of the operating divisions.

Briefly the functions of the various parts of the bank were as follows:

I. Financial control committee (senior vice president in charge) responsible for:

1. The position of the bank with regard to its reserves⁹ with and borrowings from the Federal Reserve Bank.
2. The direction and control of the use of the bank's funds, and the division thereof in a systematic way among the various classes of loans and investments, to maintain, so far as practicable, the most desirable distribution, with protection, liquidity, diversification, and earnings each duly considered.
3. The formulation of general rules for the conduct of each loaning and investing division.

⁸ The principal activity of an investment bank is raising money for corporations by the sale of the stocks or bonds of those corporations to investors. A commercial bank generally specializes in making loans to customers for short periods of time out of its own resources.

⁹ Banks that were members of the Federal Reserve System were required to keep a gold reserve with the Federal Reserve Bank ranging from 7 to 13% of the demand deposits of the bank and 3% of the time deposits. The 13% figure applied to banks in the central reserve cities, a 10% figure applied to banks in reserve cities that were not central, and the 7% figure applied to country banks.

4. The determination of the policy of the bank as to allowances of interest on deposit accounts.
5. The maintenance of advisory review over credit lines, loans, investments, the operations of the William Pitt Corporation, and the distribution of the bank's own capital stock.
6. The supervision of the expense control of the bank and of its affiliated interests.
7. The responsibility for the periodical auditing¹⁰ of all activities of the bank and of its affiliated interests.

II. Loan¹¹ and investment division:

The head of this division was in charge of carrying out the general loan and investment policy fixed by the financial control division. In this capacity he was allowed to fix credit lines up to \$500,000 (executive committee approval being required for loans beyond that amount), and to make loans within approved lines. He could delegate the line fixing and loaning to certain of his associates, with limits set by him. The work under his supervision fell into six principal subdivisions, the duties of each being as follows:

1. Credits and unsecured loans:

- a. The conduct of credit investigations in connection with all loans and investments of the bank, and concerning the solicitation of new accounts.
- b. The determination of the amounts of lines of credit, and watching concerns to which lines had been granted.

¹⁰ Auditing consisted of checking and verifying financial records by an outside expert, that is, by someone who had no part in preparing those records.

¹¹ A bank such as the William Pitt Bank secured the greater part of its income in the form of interest upon loans to customers. A business man who wished to borrow money would go to the bank in which he kept his account and interview the officer in charge of credit granting. That officer would investigate the business of the applicant, and would look into his personal character. If the credit officer was assured that the man would be able and willing to repay the loan at the end of the time specified, the loan would be granted.

- c. The handling of credit inquiries received from outside sources.
- d. The purchase of commercial paper¹² both for the bank, and, when directed, for the account of correspondent banks.¹³

2. Collateral loans:¹⁴

- a. The making of loans secured by listed¹⁵ stocks and bonds, of loans to money brokers, and of commodity loans based on cotton, wool, cattle, and other merchandise.
- b. Watching margins between the amount of the loans and the value of the security.
- c. Watching the relation between the balances carried by collateral loan customers and the amount of credit extended to them.
- d. Making mortgage investments within the limits set by the financial control committee.
- e. Installment-sales financing: the attention to the details of loans made by the bank against time-sales contracts.

3. William Pitt Corporation:

This company carried on the investment-banking activities of the William Pitt Bank. The officer in charge was responsible to the head of the loan and investment division. The functions of the corporation were:

- a. The purchase and distribution of governmental and general securities and notes, and trading in such securi-

¹² Commercial paper in general consists principally of promissory notes, drafts, and bills of exchange running customarily from three to six months. In the technical sense it consists of single-name promissory notes sold principally to banks by note brokerage institutions commonly called "commercial paper houses."

¹³ Banks outside of the financial centers of the United States commonly arrange for banking agents in the central money markets. For instance, a bank in Salem, Ore., probably would have a correspondent bank in Portland, Ore., and one in New York.

¹⁴ A collateral loan is one in which the bank requires a borrower to deposit with it something of value, usually marketable securities, which the bank can sell in case the borrower fails to pay the loan when it is due.

¹⁵ Listed stocks are those traded in on an organized exchange.

ties and in bankers' acceptances¹⁶ and Federal Reserve funds.

- b. The provision of a customers' securities service.
 - c. The sale of the acceptances of the William Pitt Bank, and, when directed, the purchase of acceptances for the bank or its customers.
4. Investment statistics division: the maintenance of an investment-information service for the use of the various departments of the bank and of its customers.
 5. Bank's investments: the handling of the investment account of the bank, subject to the policies of the financial control committee.

III. Industrial division, responsible for:

1. Slow loans and reorganizations:¹⁷ the accounts of customers in financial trouble were removed to this division, which undertook various ways of protecting the interests of the bank and all others concerned. Sometimes the solution was a reorganization.
2. Industrial department: the study of general industrial situations and specific cases in which the bank had a particular interest, with a view to assisting in possible consolidation, merger, or reorganization.

IV. Foreign division, responsible for:

1. Foreign credits: the issuance of commercial letters of credit to finance importations, the acceptance of drafts and bills of exchange secured by merchandise exported, and, in general, assistance to the credit department of the bank.
2. Trading in foreign exchange.
3. Arranging special deposits abroad, creating dollar-exchange credits for foreign banks, collecting drafts and bills of exchange on foreign countries.

¹⁶ A banker's acceptance is a draft that has been guaranteed by a bank or banker, on the basis of previously established credit arrangements between the person who eventually will pay the draft, and the bank.

¹⁷ Reorganizations constitute adjustments in the organization of companies, commonly resulting from unprofitable operations. Customarily the reorganization is of a financial nature, and involves scaling down the claims of creditors to a point which permits satisfactory operations.

4. Soliciting new business for the foreign department.
5. The purchase and sale of foreign currencies.
6. The sale of travelers' checks.

V. Trust division, responsible for:

1. Corporate trust work:
 - a. Acting as trustee under indentures relating to the issuance by corporations of bonds or notes.
 - b. Acting as depository for protective¹⁸ and reorganization committees.
 - c. Acting as transfer agent and as registrar for the stocks of corporations.
2. Personal trust work:
 - a. Acting as executor, administrator, and trustee of trusts created under wills by voluntary agreement.
 - b. Serving as guardian of property of minors, and as conservator of property of incompetents.

VI. Administrative division, responsible for:

1. Cashier's work: safeguarding funds and valuables, caring for the bank's position with the Clearing House and the Federal Reserve Bank, watching the reserves of the bank, issuing cashiers' checks, expense checks, and certificates of deposit, paying and receiving funds, and clearing and collecting checks.
2. Personnel: the hiring and discharging of clerical help, and fixing wage rates, all in cooperation with the department heads concerned.
3. Operating service departments: the stenographic, telephone and telegraph, general file, floor service, and health departments.
4. Insurance and bonding:¹⁹ the placement of all insurance and bonding required by the bank.

¹⁸ A protective committee is one composed of creditors of a company which is in difficulty. Its purpose is to conserve the interests of its members.

¹⁹ Bonding is a method of protecting the bank against dishonesty. Each employee generally is covered by an agreement with a surety company whereby any loss to the bank resulting from the dishonesty of the employee will be paid by the surety company, up to a fixed maximum amount. A small fee, generally paid by the bank, is charged by the company for this protection.

5. Accounting and statistics department: preparation of administrative reports, making of special studies and forecasts, maintaining general ledgers of the bank, and preparing statements of condition for the Clearing House, the Federal Reserve Bank and the Comptroller of the Currency. Also attending to the operation of the budget,—the preparation of estimates of expenses and of the volume of business expected, together with checking actual performance against the estimates. The budget serves as the basis for expense control.
6. Real estate and quarters: attending to all matters relative to the operation of the main office building and to the acquisition and operation of the branch offices.
7. Purchasing: purchasing all supplies for the bank and its affiliated interests.

VII. Auditor, responsible for:

1. The periodical auditing of all parts of the bank and of its affiliated interests.

VIII. New-business division, responsible for:

1. Advertising and publicity: the maintenance or improvement of existing public relations to the end of increasing the business of the bank. The development of data helpful in soliciting new accounts or in increasing the business from a customer. The active solicitation of this business through the sales department of the bank.
2. Branch offices: the development of branch offices for paying and receiving funds, including the making of preliminary surveys and the solicitation of business.
3. Safe-deposit department: the development of the service of safe-keeping valuables for customers.
4. Savings department: the development of savings-account business.
5. Correspondent-bank relations: the solicitation of correspondent-bank accounts, and representing the bank in its contacts with correspondents, including gathering information regarding them.

The foregoing constitutes a description of the principal features of the organization of the William Pitt Bank. It had

proven satisfactory, but whenever an improvement suggested itself, the officers, being progressive, were willing to try it. The place of the investment banking subsidiary, the William Pitt Corporation, in the loan and investment division, was being questioned. There was the possibility that the bank had outgrown the stage when the combination of the commercial and investment banking functions was best. The investment banking activities were specialized; they were not accessories to the making of commercial loans. Since the William Pitt Corporation had its own organization, it was not dependent as to personnel upon the loaning division. Other large commercial banks had separated the bond or investment banking division from the general banking operations.

The William Pitt Bank wished to know whether to maintain the existing position of the investment banking unit in the organization or to remove it from the loan and investment section and establish it as a separate division reporting directly to the president.

Questions

1. Should the William Pitt Corporation be removed from the loan and investment division and be established as a separate division reporting directly to the president?

2. What are the important divisions of the operations of the William Pitt Bank?

3. What are the duties of the various divisions and departments of the bank?

4. If you wished to deposit money in the William Pitt Bank, to what department would you take it?

5. To what department would you go if you wished to secure a loan (*a*) to help you in purchasing a house, (*b*) to assist you in buying a shipment of goods which you are going to sell in a short while, (*c*) to purchase 10 shares of the stock of the General Electric Company?

6. With what department would you deal if you wished (*a*) to purchase some well-known bonds, (*b*) to open a savings account, (*c*) to secure advice regarding whether to purchase bonds of the Union Pacific Railroad?

CHAPTER III

TECHNICAL AIDS TO MANAGEMENT¹

4. THE MERCED MILLS, INC.

Cost Studies and Scientific Management

The Merced Mills, Inc., owned and operated in western New York two factories engaged in the preparation of patented cereals, and in the Middle West three flour mills, the output of which was consumed by the two cereal factories. The manufacturing processes involved were relatively simple. Sales were made to chain grocery stores, to associations of independent grocery stores, and to wholesale grocery companies. The company had been successful and had become one of the leaders in the food products industry.

In 1928, a favorable opportunity was presented to buy out Coppock & Son, a company of comparable size, which manufactured products similar to those made by the Merced Mills, Inc., but which in addition produced several related food products. The sale was arranged, and the administration of the Coppock & Son plant and business was taken over by the officers of the purchasing company. The problem of these officers thereupon was one of decision upon methods which would best secure effective correlation and administrative control of the newly acquired business when operated as an integral part of the Merced Mills, Inc.

In the management of the Merced properties, of which only the manufacturing end will be considered in this case, the particular scientific methods of the Taylor² system of factory man-

¹ DUTTON, pp. 42-57; JONES, 237-288; MARSHALL, 610-642.

² F. W. Taylor made several contributions to scientific management about 1888-1890. He divided all work into planning and execution. He set up standards of performance by making time studies, determined the best way to induce employees to attain those standards, and trained employees to do work in the best and quickest ways.

agement had been used for many years with excellent success. A brief review of some of these methods will be given, and afterwards decisions relating to certain of them only will be considered.

Briefly stated, some of the main elements of manufacturing control were as follows:

From knowledge and forecast of customers' orders a manufacturing program was worked out, resulting in the issue of manufacturing orders for advantageously sized lots of goods to cover customers' orders and/or to replenish stock in the case of some lines; and to establish a manufacturing rate, to be maintained until further notice, in other lines where orders were sufficiently large and steady so that they averaged out, and it was necessary only to maintain a moderately fluctuating buffer of stock from which they could be filled at once.

Inventories of raw material, worked material, and finished stock were controlled so as to meet carefully determined requirements as closely as possible. For example, the principal raw materials—wheat, in the case of the western mills, and flour in the case of the eastern mills—were maintained by ordering a predetermined quantity whenever the stock on hand fell to a predetermined low point. Both the minimum point, or "order point," and the quantity to order were determined in the light of a knowledge of the rate of consumption, the time it took to obtain new supplies, and an estimate of delays and contingencies. In so far as possible, all other "classified stores" of standardized material, worked material (partly finished and held for finish to the particular order), and finished stock items were controlled in the stock and stores rooms on this same general basis of "maximum and minimum" or "order point and order quantity." A system of stock ledgers, material requisitions and credits, bin tags, and the like carried out this control in accordance with standard Taylor practice.

So far, there have been considered: the manufacturing program, the control of materials required by it, and the control of manufactured stock. In carrying out this manufacturing program, it was necessary to provide for specific instructions to workers in the shop by means of "job tickets," along with the necessary related instructions for moving material along the route of that job from one work-place to another until finished,

for inspection, sending to stock or shipment, and the like; and in addition, the building up of standard-practice instructions advising the several departments as to the standards and methods to be maintained in producing standardized goods. Most of these tickets and papers were made out according to forms that had been worked out by Taylor and his associates and followers.

A Taylor "planning board" was used to keep visibly before the planning department memoranda of the work going on at a given time at every work-place or machine, along with memoranda of work ahead of that work-place or machine—each job being represented by a numbered ticket hung on appropriate hooks representing respectively work in process and work ahead, in the rectangular space allotted to that machine or work-place on the planning board.

One of the main tasks of the planning department was to work out and maintain from the manufacturing orders a schedule of work for the various departments which should bring the orders through in predetermined priority, and at the same time minimize idle time of both machines and men. The planning board was a great aid in doing this. To set up this schedule it was necessary to know the working capacities of the machines, and the amount of work that might fairly be expected from an employee on each job to which he might be assigned. Studies of machine capacities, and time studies of representative workmen on all of the jobs likely to recur, afforded the necessary data; and the scheduling consisted in large part in the application of the knowledge of machine and personnel capacities to the various jobs of the schedule, and then working them in together so that they would not interfere with each other. Once the scheduling had been decided upon, it remained only for the foreman, aided by the planning department, to despatch the work through the shop in accordance with it. Where a job was standard, these time and capacity studies had been made a considerable time before, but whenever changes or improvements were made, they were revised and brought up to date.

This list of manufacturing activities does not exhaust the systematic control functions, but is typical of the methods of handling the work that had proved successful in the several properties of the Merced Mills, Inc.

Costs had to be determined accurately, since the margin of

profit on these goods was small. The cost system in use took the prime cost data from the material requisitions and job tickets, upon their return to the office, and thus gave a simple and accurate basis for allocating to any given job the costs of materials and labor entering into it. Further knowledge of expense items in relation to goods made gave a basis for charging against each job its fair proportion of the overhead costs assessed against the several departments in which it had been worked on.

The officers of the Merced Mills, Inc., had to decide how they should direct operations of Coppock & Son when the latter became a principal division under correlated management. The Taylor system had been found to be well adapted to the conditions in both their flour and cereal mills, and they believed that it was adaptable to a wide range of manufacturing activities. Obviously, there would be marked advantage in having the same system of control in all plants, unless it turned out that there was definite reason to the contrary. Since the condition of the newly acquired company would have to be reviewed periodically by the chief executives of the consolidation, it was particularly desirable that the system in all plants should be the same, since otherwise it would be difficult to interpret reports and be sure that the meaning of figures was comparable in the various factories. It was necessary, however, to weigh the fact that the organization in their own mills had for the most part grown up under this system, while the Coppock & Son organization was not familiar with it. The claim has been made repeatedly that a system ought to grow up with the growth of a manufacturing plant, and not be grafted on. The greater diversity of the manufacturing process and the somewhat less concentrated sales outlets of Coppock & Son suggested the possibility that the scientific management methods used by the Merced Mills, Inc., might not be well adapted to the newly acquired properties.

The Coppock & Son plant was located in Minneapolis. It made a larger number of products and used a considerably larger number of raw materials than did the Merced properties, and the manufacturing processes were in some instances a good deal more complicated. Selling was largely through wholesale grocers. A number of the officers of this company retired at the time of consolidation, and some others indicated their intention of resigning as soon as matters were in shape to permit it. The

clerical force, foremen, stock-and-store-keepers, and the working force, might be expected to remain except in cases where the new management found it inadvisable to keep them.

The manufacturing control of the Coppock & Son factory was reported to have been working satisfactorily. It was a much looser type of control than that of the Merced plants—that is, there was less of preplanning, standardization, study of capabilities and requirements, forecasting and central control. Many decisions that at the Merced finishing plants were matters of routine and were never brought to the attention of any one beyond the clerical force, unless special conditions developed, in the Coppock & Son plant were redecided frequently and sometimes were taken up to the attention of department heads. In point of fact, it turned out not infrequently that a decision quickly made by a busy officer was questioned by a functionary of lesser authority, but with more intimate knowledge of the situation; and in such cases the decision might be greatly modified to meet the judgment of the latter man. In such cases, if the outcome was favorable, nothing more was heard about it; if not, any resulting reprimand was generally in the nature of a caution rather than a definite curtailment of subordinate authority and discretion in carrying out orders.

As in most cases where control was loose, it was found that the effective way of forestalling actual delays in filling orders lay in having "buffer stocks" of goods in process, and a larger raw and finished inventory than would be necessary if more exact knowledge and better forecasting were available. It appeared, therefore, that the total inventories of the company were materially in excess of the amount that it would be possible to work with under conditions of close control. Except where materials were perishable, this involved only a loss of interest unless the general trend of prices were downward. If this latter condition occurred, the resultant loss might be large.

It was the feeling of the officials of the Merced Mills, Inc., that if the Coppock & Son manufacturing control were to be brought in line with that of the other plants, it would be better to make the necessary changes at the earliest possible time, thereby establishing standardization, facilitating interchange of personnel, and setting up, as was hoped, direct economies similar to those that had been realized in the other plants. The chief

executive of the Merced Mills, Inc., was an enthusiastic exponent of scientific management and of the Taylor conception of it. He had found this system valuable in his own companies and believed that the difficulties found in the newly acquired plant in Minneapolis were not such as to foreshadow any less favorable result. On the other hand, he wished to weigh before the start all the adverse factors that could be thought of, both tangible and intangible, and particularly to feel sure that the morale of the new organization would not suffer through the changes contemplated.

Questions

1. Describe how scientific management can be applied to the control of costs, the control of inventory, the control of the time required for manufacture, and the checking of the performance of individual laborers.

2. Should the Merced Mills, Inc., install the methods of scientific management in use in its mills in the newly acquired plant of Coppock & Son? Give the reasons for your decision.

5. SNELLING MACHINERY COMPANY

Production Schedules and Production Control

The Snelling Machinery Company manufactured a wide variety of machines, such as spinners and weaving looms, used in textile manufacturing. Many of the parts used in building the machines were purchased ready for assembly. Other parts were made by the company in its own factory.

In accordance with one of the chief principles of the Taylor system of factory management, the company already had separated the function of planning work from the actual performance of the factory operations. The question arose, however, whether the separation had been carried far enough to yield the best results. A separate department had been organized to do the planning of work for the factory, but in the manufacturing departments the foremen, who directed the workmen, still had to devote a part of their time to details of the planning department's work. Thus, factory foremen were responsible for attending to the clerical work required in their departments for the operation of the planning department schedules. Frequently

foremen, because of the press of other work, did not give prompt attention to their clerical duties, and, as a result, confusion, delays, and stoppages in production schedules were frequent.

The planning department had descriptions of every production machine used in the factory, and instructions for its operation. Upon receipt, orders from customers were given to the planning department. This department then analyzed the order to find out what parts had to be made before the desired machines could be assembled. Knowing the factory machines that were available to make various parts, the planning-department clerks were able to assign the required parts to the machines capable of making them. Then the planning department made out triplicate job tickets, one complete set for each factory machine to be assigned to work on the order.

The job tickets, as made out by the planning department, showed the number of parts to be made, the order for which they were needed, and the exact specifications which were to be followed in making the parts. The specifications, for instance, described the shape, size, and material for the required parts.

Each part usually had to be put through several different machines in succession, because one machine normally performed only one operation. To make a grooved bolt, for instance, one machine rounded off a metal bar; another machine shaped the head; another threaded the bolt; and still another made the groove. Each machine was attended by at least one workman.

It was the function of the planning department to schedule the work to be done on incoming orders in such a manner that all machines in the factory were given approximately the same amount of work, in order to avoid the undue idleness of individual machines. Since the time needed for each operation was shown on the machine-instruction cards, the planning department, after scheduling the work, was able to estimate the approximate date on which an order should be completed. The orders received from customers were recorded on individual sheets, to which were posted the times of beginning and finishing on each successive machine used in completing the order.

In this department, long racks were provided in which were compartments, divided into three sections. There was a separate compartment for each machine in the plant. All machines bore numbers which indicated their locations in the factory.

Each compartment in the planning department was numbered to correspond with a factory machine, and was designed to hold duplicates of the job tickets assigned to the machine. In the first section of a compartment was placed the ticket for the parts actually in process on the machine. In the next section was the ticket for the job scheduled to be started next, and in the third section were the tickets for future jobs.

In each production department there was a shop bulletin board on which were individual spaces and numbers for all machines in the department, corresponding to the racks in the planning department. In the space under each machine number on the bulletin board, there were three hooks to hold the job tickets for that machine. These hooks were so arranged that the job ticket for parts actually being processed by the machine was hung directly under the machine number, the job ticket for the next job below that, and on a third hook the tickets for subsequent jobs.

The triplicate of the job ticket in each case was given to the workman, becoming part of the labor record on the job. When the operator of a machine completed a job, he reported to his foreman. The foreman then removed from the shop bulletin board the tickets both for the job just finished and for the job next to be started. He sent these two tickets to the planning department by messenger. The planning department stamped the time finished on the first ticket and the time started on the second ticket, and returned the second ticket to the foreman to be placed on the first hook under the given machine number on the department bulletin board.

The planning department then authorized the inspection of the job just completed and specified to what machine the material should be moved for the next process. The tickets in the planning department racks were changed accordingly, postings were made to the individual order sheet, and the tickets for the completed job were filed for reference. By this method the planning department was able to control the routing of all orders in the plant.

The company's officials found that in actual practice foremen in the manufacturing department needed to spend from a quarter to a half of their time in handling job tickets on the shop bulletin boards, whereas their most important duties were thought

to lie in supervising the actual machine processes. It was the task of supervising both men and machines, for which the foremen's training and previous experience as workmen best fitted them. Machines often needed repairs and adjustments, some of which could be made under the foreman's direction, while others required the services of skilled repairmen. New workmen were instructed in their duties by the foremen, who also were responsible for maintaining discipline in the factory.

The planning department, furthermore, found difficulty in securing prompt and accurate handling of the job tickets. The manager of the planning department, consequently, proposed that he be allowed to assign men from his department to handle the work at each shop bulletin board. This change would allow the foremen to devote their entire time to supervising their men and machines, at the same time insuring immediate and careful attention to job tickets. An obvious disadvantage of this plan was the expense involved in increasing the staff of the planning department.

Questions

1. Would you have recommended keeping the planning department?
2. Should planning department clerks have been assigned to the factory planning boards?
3. Was it desirable to establish any additional departments, to take over such of the foreman's duties as
 - a* repairing machines,
 - b* training new workmen?

6. PENDLETON SAW COMPANY

Simplification and Standardization

The Pendleton Saw Company manufactured high-quality saws, knives, files, hack saws, and other cutting tools requiring superior steel. The company was one of the three largest in the industry. Its products, which were advertised widely, were sold throughout the United States and Canada.

The elimination of the nonessential sizes of the company's products was sought. The World War had prompted both the gov-

ernment and manufacturers to study standardization possibilities but interest in the subject lagged after the armistice. The depressed condition of business following 1920 caused the executives of the Pendleton Saw Company to make another analysis of the products manufactured to determine whether savings could be secured from a reduction in the number of sizes of each produced.

The properties of the company included three factories and a steel mill, which manufactured the bulk of the raw steel used by the company. The executive offices and the original factory were located in a small manufacturing town near Chicago. Distribution of the products was accomplished through 12 sales branches located in the principal markets for saws and fine steel products in the United States and Canada. Each sales branch had a definite territory which was covered by the salesmen from that branch. The executive offices kept a check on the volume of goods stored at each branch. Requisitions for stock in excess of \$300 required the approval of the treasurer of the company.

The Pendleton Saw Company kept supplies of standard-sized saws on hand at the branches. Orders for articles of standard size usually were filled promptly. Delivery on orders for non-standard sizes, however, in most instances required six to eight weeks from the receipt of the order, and because of the greater difficulty entailed in producing articles under non-standard specifications, the manufacturing cost of such articles was greater than that of the standard articles.

Since the officers were convinced that substantial savings could be effected by a reduction in the number of sizes, the Pendleton Saw Company made a careful tabulation of the sizes of all types of hand saws manufactured by the company. Figures showed that the insistent demands of customers for desired sizes gradually had led the company to manufacture 513 different sizes of hand saws. Of this number, sales in 1922 were made as follows:

347 sizes—less than 3 dozen sold.

75 sizes—over 3 dozen and less than 10 dozen sold.

91 sizes—over 10 dozen sold.

After a detailed study of the sales figures for the hand saws of various sizes, the Pendleton Saw Company concluded that

approximately one-third of the sizes would prove ample for all needs of the trade. Branch managers, salesmen, wholesalers, and retailers undoubtedly would oppose any changes which might lessen future profits by decreasing sales to customers who were convinced that their needs were filled most satisfactorily by the sizes usually ordered, but on the other hand, there appeared to be no sound reason for the continued manufacture of over one-third the 513 sizes. For example, there was so little difference between a saw with six points and one with seven points to the inch, that they could be used interchangeably under nearly every condition in the trade. If all important manufacturers of saws would agree to produce the same standard sizes, customers would become accustomed to asking for only those sizes, and all wholesalers and retailers would be in the same position in regard to the probable loss of customers.

The Pendleton Saw Company decided that concerted action on the part of the important manufacturers was necessary. The major manufacturers of hand saws, accordingly, were approached. A chart was prepared showing the number of sizes produced by each of these companies. Representatives from each company then met to discuss the practicability of the proposed changes. A majority of the manufacturers had had the same experience as the Pendleton Saw Company. All the representatives agreed that if the number of sizes of hand saws was decreased, substantial savings in factory costs could be made. It was impossible to determine definitely the amount of savings which would result from a reduction in the number of sizes, but the saving in production costs was estimated to be from 10 to 20%, according to the number of sizes eliminated.

One important advantage in a reduction in the number of sizes was the fact that elimination of slowly selling articles would release working capital previously tied up in inventory in wholesale and retail firms, as well as in the factories and sales branches of manufacturers. For that reason, a majority of wholesalers and retailers probably would not hesitate to accept the reduction in sizes.

Because all manufacturers did not produce the same sizes of saws, it was difficult to fix definite standard sizes. Finally, however, the committee of manufacturers adopted 177 sizes of hand saws as best meeting the requirements of the trade. Approx-

imately 64% of the number of sizes formerly manufactured thus were eliminated.

The Pendleton Saw Company adopted the 177 standard sizes. In 1924 the plan had proved successful and the company was attempting to reduce the number of sizes of circular saws, files, and hack saws, through further study of the production and sales factors involved.

Questions

1. What are the different problems involved in manufacturing on the special orders of customers and in manufacturing standard articles for stock?

2. It has been said that the rapid growth of manufacturing in the United States has been made possible by standardization of parts, methods, and products. Discuss this statement and compare the situation in England, for example, where standardization is a less dominant characteristic of industry.

3. Do you think that standardization and simplification within the Pendleton Saw Company will bring the ends desired, or must the entire industry cooperate to secure the economies believed to be possible?

CHAPTER IV

ORGANIZATION OF OPERATIONS ¹

7. CENTRALIA EASTERN RAILROAD

Divisional and Departmental Organization

The Centralia Eastern Railroad served a densely populated industrial territory. The traffic on its main lines was heavy, but the system, made up of about 2,400 miles of road, included many branch lines on which the volume of traffic, both freight and passenger, was relatively small. For operating purposes, the system was divided into 3 districts and 10 divisions. The total number of employees, in 1924, was about 34,400, of whom about 31,000 were in the operating and maintenance departments.

The organization of the Centralia Eastern Railroad prior to 1916 had been departmental; the kind of work determined the administrative unit. In that year, however, it was changed to divisional; a geographical area determined the administrative unit. The division superintendents, whose authority previously had been confined to the operation of stations, yards, and trains, comprising the transportation department, were given the supervision within their divisions of the maintenance of ways and structures, and the maintenance of equipment outside of the general shops. The division engineers and master-mechanics thus were subordinated to the superintendents. With this divisional system the organization of the Centralia Eastern Railroad conformed to that of most large railroads. Benefits were expected as the result of giving the division superintendents authority over, and responsibility for, maintenance as well as transportation activities. The new plan would afford an opportunity to develop the superintendents for positions of greater responsibility. In addition, an improvement in the attitude of divisional employees was expected under the new system, for

¹ DUTTON, pp. 58-71; JONES, 147-162; MARSHALL, 799-812.

previously the departmental system had tended to glorify the department rather than a divisional whole.

Difficulties were expected in making the change. The division superintendents had no experience outside of the transportation department; some might hesitate to assume the additional tasks, while others might overstep the boundaries of their new authority and antagonize the division engineers and master-mechanics. These technical officers might resent being subordinated to a superintendent untrained in engineering. The loyalty they entertained toward their particular departments would tend to exceed that for the division. The desirability of having a superintendent with an engineering training, however, would serve to increase the chance of the technical officers for promotion.

The results of the trial of the divisional form of organization were less satisfactory than were expected. The superintendents failed to find enough time in which to attend to their new responsibilities; the strictly transportational duties, if given conscientious attention, occupied them fully. The division engineers and master-mechanics, consequently, were left to manage their own technical affairs much in the same manner as before the change had been made. Because of this, it was natural that the division engineers and master-mechanics continued to look to the heads of their departments for guidance and instructions, rather than to the superintendents. Consequently, the organization on the official chart and the organization in fact were not consistent. The chart showed the divisional plan; the fact was that the departmental plan was being continued.

After it had been tried for five years, the management of the Centralia Eastern Railroad in 1921 decided to abandon the straight divisional system. Three major considerations explained this decision:

1. It would take too long to train superintendents who could make the most of the greater opportunities under the divisional plan. In 1920 and 1921 the road had been operating under trying conditions of traffic congestion and a high percentage of unserviceable locomotives and cars, so the time seemed especially inopportune for a continuation of the divisional experiment.

2. The supervision of the transportation activities on a division was a heavier task than had been supposed. A fairly

heavy volume of freight was accompanied by an exceptionally heavy volume of passenger traffic.

3. The compactness of the system and the relatively short distance from the general offices to each of the divisional headquarters tended to make the divisional system unnecessary. Centralization of authority was not objectionable in such a situation, though it would be upon a transcontinental line, where, for example, the superintendents were scattered from Chicago or St. Paul to the Pacific Coast. On these long lines the divisional system, with its decentralization of control and its large measure of local independence, was at its best.

A modification of the departmental plan was adopted in 1921. The management of the Centralia Eastern Railroad wished to secure some of the advantages of the divisional plan, even though as a whole the plan had not been successful. The new organization, after three years of trial and adjustment, was as shown in the chart in Exhibit 1. To all appearances it is an unmodified departmental organization.

The division engineers and master-mechanics were coordinate with division superintendents. The superintendents reported directly to a general superintendent who, in turn, reported to the general manager. In matters related to the distribution and use of equipment, and to the coordination of train service, the superintendent, as well as the general superintendent, reported to a superintendent of transportation, who was a staff officer and acted for the general manager.

The division engineer, who had direct jurisdiction over maintenance of ways, structures, and signals, was independent of the superintendent and reported to a district maintenance engineer. That officer, in turn, reported to the engineer of maintenance of ways, who was a subordinate to the assistant general manager.

The master-mechanic was made independent of the superintendent in a similar way. The master-mechanic, who had jurisdiction over engine-house foremen, foremen of outside car-repair facilities, and road foremen of engines, was responsible to a district mechanical superintendent who reported to a mechanical manager. The latter reported directly to a general manager.

In summary, the operating organization briefly was as follows: There were five horizontal planes:

1. The executive plane, consisting of the president and, subordinate to him, the general manager.

2. The assistant general manager, who exercised authority over maintenance of ways, the mechanical manager, and the

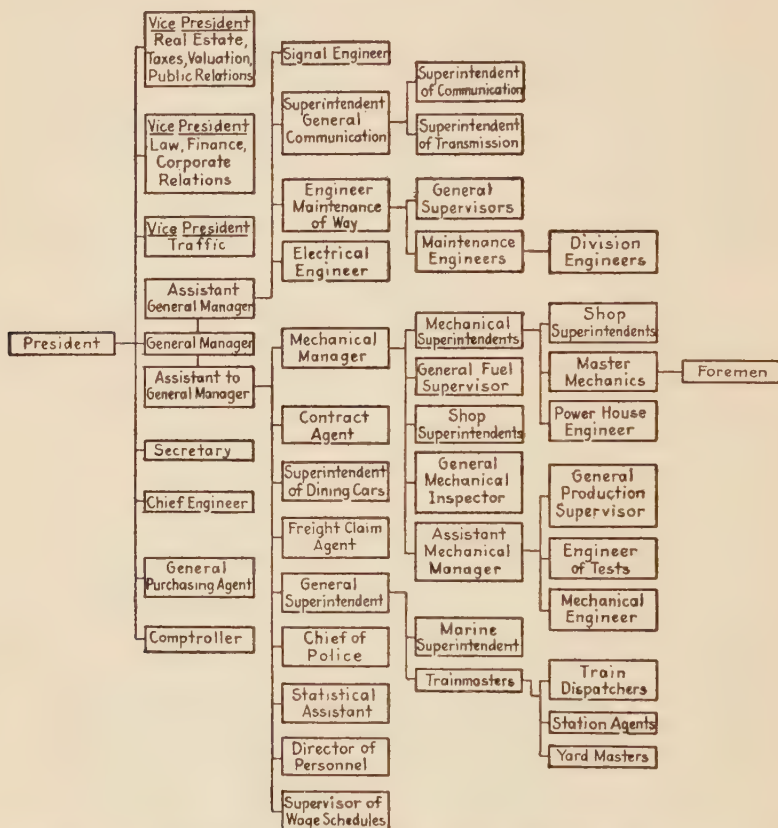


EXHIBIT. 1.—Organization chart, Centralia Eastern Railroad. (Only the operating activities are given in detail.)

superintendent of transportation. These were on the plane of subdepartment heads.

3. The district plane, on which were the general superintendents, district maintenance engineers, district mechanical engineers, and superintendents of general shops.

4. The divisional plane, with superintendents, division engineers, and master-mechanics.

5. The subdivisioinal plane, with a miscellaneous group of minor officials reporting to divisional officers.

The organization described in the preceding paragraph and in Exhibit 1 is distinctly departmental. The modifications which gave it divisional characteristics were specified in a manual which defined the scope, authority, and responsibility of each officer. This pamphlet of instructions provided that maintenance engineers and mechanical superintendents were staff officers of, and occupied offices with, general superintendents, and division engineers and master-mechanics were staff officers of, and occupied offices with, division superintendents. These directions implied that the superintendent was the superior officer. Yet the chart showed that they were coordinate, and, as a matter of fact, they *were* coordinate.

This modification, the president believed, would give the results desired. The departmental organization elements that were included permitted independent action and specialization, while the divisional features that were retained, described in the preceding paragraph, encouraged cooperation and created the feeling of working for a common purpose. The manual pointed out that the strength of the organization depended upon mutual understanding of responsibility and authority.

Questions

1. Describe the essential differences between departmental and divisional organization plans.
2. In what other instances besides in the longer railroads would you think the divisional plan would be used?
3. Are there any differences between the departmental organization illustrated in Exhibit 1 and the organization of the William Pitt Bank illustrated on page 33. If so, describe them.
4. Do you think the modified departmental plan finally adopted by the Centralia Eastern Railroad will work out satisfactorily? Why?

8. MONTAIGNE PUBLISHING COMPANY

Functional² Organization

The Montaigne Publishing Company of New York specialized in the publication of college, high-school, and elementary-school textbooks. Originally the company had restricted its operations to publishing, but several years of successful and increasing business had permitted the undertaking of book printing and binding. The company became one of the most important distributors of textbooks in the United States.

The company had been founded in 1885 by George Montaigne, who was a man of wide attainments. The growth of the business had made it necessary for Mr. Montaigne to have executive assistance; ten of the men who had been members of the organization were made partners by Mr. Montaigne. These men were well chosen; when the founder of the firm died in 1910, they carried on the activities of the company with increasing success. Eight more partners were added in the years which followed. The administration of the company was in the hands of the 18 partners, and consideration was being given to the effect which incorporating the business of the partnership would have upon the executive organization within the company.

The activities of the Montaigne Publishing Company fell into four groups: editorial work, finance and accounting, manufacturing, and distribution. The relation of these functions in the partnership organization is shown in the chart in Exhibit 1.

The editorial department was supervised by a partner whose principal duties were the maintenance of the relations of the company with authors, and the selection of manuscripts. It was his duty also to determine upon the publication of new books. The work of the editorial department was considered of key importance, inasmuch as having a list of reputable authors was an important asset in the publishing business. The intelligent

² In a functional organization, duties are divided according to kind. Thus, in the case of the Montaigne Publishing Company, all editorial work, that is, the editorial function, was carried on by one partner. If one partner had supervised all work in connection with the publication of college texts, including editing, printing, and selling, and another partner had done the same for high-school texts, the organization would not be called functional, but divisional.

selection of manuscripts had a direct bearing upon the success of the business. The partner in charge was assisted in his work by several assistant editors, and the advertising function was also carried on in the editorial department.

The sales function was divided among 14 partners who were located at strategic points in the various sales districts into

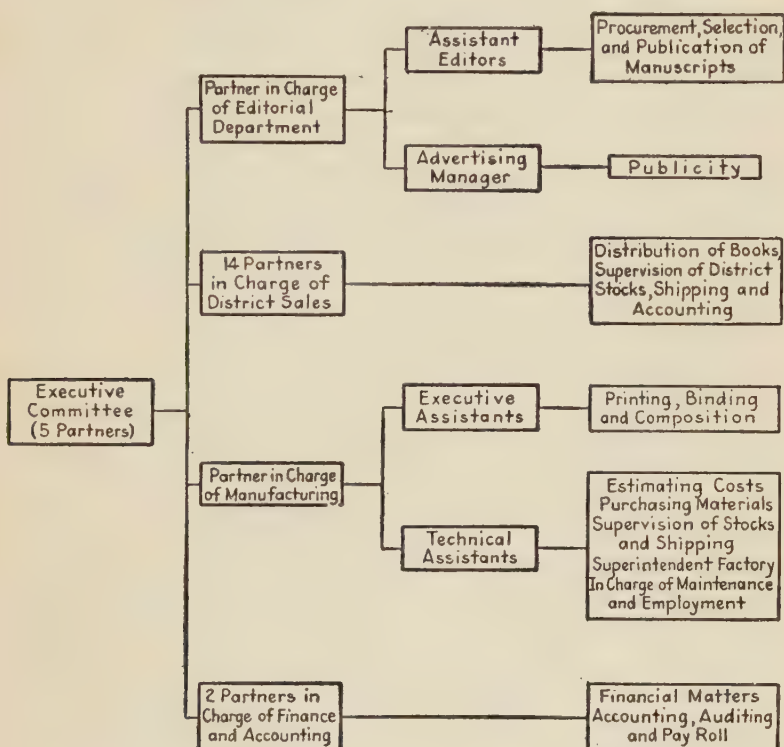


EXHIBIT 1.—Partnership organization chart, Montaigne Publishing Company.

which the country had been divided. In the more thickly populated districts, there were as many as four partners in one district office. In such a case, one partner had charge of college texts, another of high-school texts, a third of elementary texts, and a fourth partner would assist in an advisory capacity in all three divisions. In less dense areas a single partner would carry on the entire sales activities of the company.

The manufacturing division was supervised by a partner whose duties were those of a factory manager. The printing and binding of books was a highly specialized process requiring the employment of much labor and the utilization of much machinery. The manufacturing manager was assisted in his work by executive and technical assistants. The former attended to the composition, the printing, and the binding of books; the latter (the technical assistants) made cost estimates, purchased materials, supervised stocks of materials, attended to shipping, and superintended the factory, including its maintenance, and the employment of factory labor.

The finance and accounting functions were attended to by two partners. Ordinarily, these activities would be conducted under the direction of one partner, but the probability that the older of the two would retire soon because of age made the presence of a second partner in the department desirable. The finance and accounting work included the making of collections, the keeping of books, the preparation and auditing of reports, and the administration of the pay roll.

A meeting of all partners was held each year at the home office. At that time operating reports were presented and the entire range of the affairs of the company was discussed. The chief coordinating force in the organization, however, was the executive committee, which met each month. The committee was composed of the editorial partner, a partner representing college textbook distribution, one representing high-school textbook distribution, a financial partner, and a fifth partner, who, owing to his seniority, was appointed chairman of the committee.

Much informal contact was possible among members of the organization. The excellent judgment of one of the sales partners, for example, had caused him to be consulted frequently by other partners upon important questions of district policy. To decide questions relative to the publication of a particular book, committee conferences were held of the editorial, manufacturing, and sales divisions in the determination of quality, cost, and price. The editorial partner relied upon sales partners to tell him of new sources of manuscript material, and of trends appearing in the textbook market.

Several of the senior partners of the firm were near the age at which they would retire. The incorporation of the business

was being considered, to give the enterprise a greater degree of permanence. A tentative organization of the functions of the

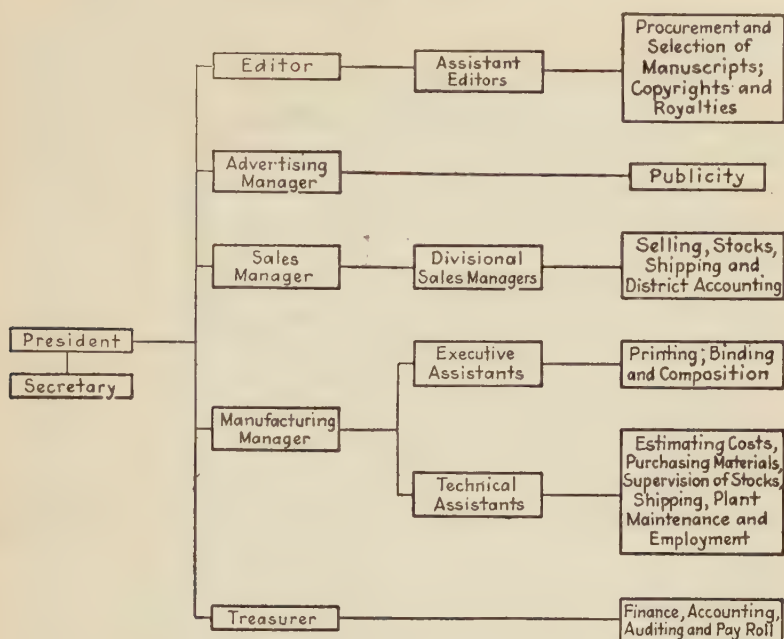


EXHIBIT 2.—Prospective corporate organization chart, Montaigne Publishing Company.

enterprise as a corporation was drawn up. The chart is shown in Exhibit 2.

Questions

1. What are the characteristics of the Montaigne Publishing Company which adapt it to the functional type of organization? What are the principal functions of the publishing business?

2. Comment upon the type of organization illustrated in the cases of the Rainier Lumber Mills, Exhibit 1, page 20, of the James Anderson Department Store, Exhibit 1, page 29; and of the William Pitt Bank, Exhibit 1, page 33. To what extent is each functional? Are there any divisional or departmental characteristics in each?

9. LAMBERT WATCH COMPANY

Line-and-staff Organization

The Lambert Watch Company employed approximately 4,500 persons in 15 departments, each of which normally had about 300 employees. Since the processes required for the manufacture of watches were highly specialized, each department was managed practically as an independent unit. The resulting lack of coordination led to large inventories of goods in process.

The Lambert Watch Company produced watches of 37 grades. Each month the general superintendent, in conference with the sales department, estimated the number of watches of each grade to be manufactured during the month following. From this estimate, the general superintendent determined how many of each part for each grade of watch were required from the individual departments. Then a departmental quota was furnished to each department head, who from that point had complete control of the operations within his department. Each department head purchased his own raw materials, had complete jurisdiction over his own workmen, and computed his own costs and pay roll. All planning likewise was done in the separate departments, each of which regulated its own schedule of work, based on the monthly quota assigned by the general superintendent and the number of finished parts on hand in the departmental storeroom. In each department there was a storeroom for finished parts manufactured in that department. These parts were issued from the storerooms when requisitioned by the assembly department or by departments performing subsequent manufacturing operations.

Because of the large number of intricate and time-consuming operations required for the manufacture of high-grade watches, the rate of stock-turn of materials in process was low and at the same time the value of the materials in process was high. When the rate of stock-turn reached the low figure of once in 18 months, the president recommended that the control of production be centralized, in order to prevent the inventory of materials in process from becoming excessive.

The management decided to install a central planning

department to be in complete control of production planning. The central planning department, which had a staff relation to the leading executives in the line of authority, was to determine a basic manufacturing schedule and was to issue manufacturing orders to each department at such intervals that the requisite number of parts needed to assemble a particular lot of watches would be completed and ready for assembly at one time. In this way, any lot of pieces going through the factory could be identified with a particular lot of watches to be assembled, and a check could be had on the efficiency of the manufacturing departments.

In making this decision the president took into consideration the fact that the large number of constituent parts of a high-grade watch required the use of machines which had to be reset in order to work on different parts at different times. Many parts were common to several grades of watches, some of which were comparatively inexpensive to produce, whereas others showed high unit costs. In connection with the centralization of production planning, it was provided that the inexpensive parts which were common to several grades of watches should be made for stock and issued upon requisition, instead of being made for each lot of watches ordered.

To make the work of the planning department fully effective, purchasing was taken out of the hands of the individual department heads and centralized under one purchasing agent, whose duty it became to insure the delivery of a proper supply of materials to each manufacturing department.

The management anticipated that the coordination of production schedules would bring the inventory of goods in process to the lowest point compatible with uninterrupted production. Although the central planning department involved a new element of overhead expense, this was expected to be more than offset by the economies secured not only in the reduction of inventories but also in the increased efficiency of the manufacturing departments.

The chief difficulties that appeared when the system was introduced resulted from the unfamiliarity of the clerks with the manufacturing problems. There was a tendency to be over particular without regard to mechanical details. For example, the manufacture of the exact number of parts ordered

was insisted upon. In the case of some of the machines, from one to two weeks were required to complete a set-up before the machine was able to produce parts in quantity. Then, in many instances, the small quantity of parts ordered could be completed in half a day. There was, in consequence, a heavy loss of time in the set-ups. It was considered advisable, therefore, when a set-up had been made, to produce several months' requirements instead of one month's requirements. A further difficulty resulting from the inexperience of the clerks appeared in the scheduling of the different machines. Many of the machines were adapted to perform operations on several different parts. Frequently it became necessary to shut down one of these machines because the quota of a certain part had been completed and none of the other parts produced by the machine was needed at that particular moment. Complications were caused in the department when, at some other time, several of the parts manufactured by the machine were ordered at once.

The company, furthermore, was hampered by a great mass of details which required a large clerical force. Each function was divided and subdivided to such an extent that the organization was hindered greatly, and also there was much duplication of effort.³ Much of the set-up of the organization had to

³ Although military, or line, organization insures clear demarcation of authority, the many decisions to be made in large organizations upon matters of sale, production, and finance demonstrate the desirability of securing some of the advantages of functional specialization without the possible confusion of authority. Many firms have, therefore, adopted a combination usually called "line-and-staff." Among these is the Stetson concern, manufacturing pipe fittings and valves. Authority is transmitted directly from the president to the following officers: vice president in charge of engineering, purchasing agent, comptroller, vice president in charge of production, employment manager, vice president in charge of sales, treasurer, and traffic manager. The president is assisted by the executive committee, consisting of the comptroller, vice president in charge of sales, and staff assistant or chief of staff; also by the staff consisting of an organization expert, the executive assistant to the president, and the staff assistant mentioned above.

The ideal staff in any large industrial organization is said to include a chief of staff, who should be broadly educated and expert in management and whose duties should be to direct research and conferences between staff and line. In addition, there should be as members of the staff, first, one versed in accounting, business statistics, records, and cost systems; another, an engineer in charge of testing materials; a third, capable of giving

be abandoned. Unnecessary details and the duplication of effort were eliminated, as far as possible, and a large part of the recording, which appeared to be of no great value, was discontinued.

In two years' time the new system of control was operating satisfactorily. Although 11 of the 15 foremen left the company because of dissatisfaction with the changed methods, the assistant foremen had been trained sufficiently to fill the foremen's positions. All the difficulties of the system were of a nature that time and experience could overcome. The larger clerical force that was employed at first was reduced to such an extent that that portion of overhead expense was no greater than prior to the change. The inventory was reduced constantly; the total reduction in two years' time amounted to $33\frac{1}{3}\%$ of the value as of the time the change was put into effect.

Questions

1. Describe the essential characteristics of a line-and-staff organization.

2. What were the characteristics of manufacturing watches which made central planning necessary in the case of the Lambert Watch Company?

3. What difficulties did the central planning staff have in establishing itself in the organization of the Lambert Watch Company?

advice relative to buildings, equipment, and production methods; a fourth, able to handle labor relations.

It is evident that this ignores the need for expert advice in the solution of distribution problems; but such omission may be explained in part by the general tendency to emphasize production and by the lack of competent consultants in distribution matters who might occupy a staff position acceptably.

CHAPTER V

ORGANIZATION OF OWNERSHIP ¹

10. ORDWAY BAKERY COMPANY

Change from Proprietorship to Partnership or Corporation

In April, 1924, E. A. Ordway asked a law firm for legal advice in regard to forming a partnership. All Mr. Ordway's experience had been in the bakery business, and for 15 years he had been the head of his own bread- and pastry-making enterprise. He gradually had built up his organization until in 1923 the sales amounted to about \$330,000. The annual net profit then was about \$50,000.

Starting with small resources saved from his wages while employed by others, Mr. Ordway by successful management had strengthened his credit and had been able to borrow constantly larger sums from banks. His borrowing requirements never had exceeded \$35,000. At no time had it been necessary to take other men into partnership in order to obtain greater capital.

Mr. Ordway was about seventy years old. He had two sons, aged thirty-three and thirty-five, who acted as salaried assistant managers in the business, and three daughters. The Ordway Bakery Company was an individual proprietorship and Mr. Ordway received all the profits. As proprietor of the business, he was personally liable for the performance of all contracts that were entered upon for the purposes of the business, and he also was liable, to the full extent of his private estate, for the debts of the enterprise. Thus, if for any reason the business assets were inadequate to pay obligations, the creditors could lay claim against Mr. Ordway's home and other possessions, including his private bank accounts. Although he shared his profits with his

¹ DUTTON, pp. 77-83; GERSTENBERG, 45-110; 587-620; LINCOLN, 61-84; MARSHALL, 400-404; 705-751.

sons and daughters, Mr. Ordway paid income taxes² on them as though they were his personal income. The taxes increased proportionately with the amount of income. Mr. Ordway considered reorganizing his enterprise for three reasons: first, he wished to divide the profits among his children in order to avoid the surtaxes on his income; second, he wished to provide that the control of the business would be divided between his sons after his death, and that his three daughters would receive a small share of the profits; and third, he wished to retain full control of the company as long as he lived. With these ends in mind, Mr. Ordway planned to form a partnership, making his sons junior partners. According to this plan the profits would be divided. Since the share of income going to each individual would be much less than Mr. Ordway previously had received alone, the income surtaxes would be reduced. Mr. Ordway's control of the company, furthermore, would be assured until he died.

To make the partnership effective, Mr. Ordway and his two sons would join together to carry on the business for their common benefit, each contributing either property or services, and each obtaining an agreed share in the profits. Probably each would assume, likewise, liability for all losses incurred, and each, individually, would have full power to bind the others in any business contract undertaken. New partners could be taken into the firm only with the consent of the existing partners.

When Mr. Ordway requested the law firm to draw up the papers necessary for the formation of a partnership, the lawyers

² Briefly, for a resident or citizen of the United States, an income tax is a tax on the individual's net income, when his total income minus specified deductions is in excess of a minimum figure. This minimum figure can be varied from year to year by enactment of new laws, and it is greater for married than for unmarried persons. At the time of this case, the minimum for unmarried persons was \$1,000; for married persons, \$2,500 plus \$400 for each dependent person in the family. The tax was composed of two parts, a "normal" tax and a "surtax." The normal rate was stated to be 8% on all net income above the minimum figure; for residents or citizens of the United States, it was 4% on net income up to \$4,000, and 8% on net income above that amount. In addition, on net incomes of \$6,000 and above, the surtax rates were applied. The amount of surtax increased cumulatively as net income rose above \$6,000. For a net income of \$25,000, for instance, the total surtax was \$980; for one of \$50,000, it was \$5,420.

suggested that he should also consider the advantages of incorporation before deciding upon the formation of a partnership. The inheritance taxes on Mr. Ordway's share of the company would be the same under either plan, since the amounts to be inherited would be identical. It was estimated that legal fees, stamp taxes, and a charter necessary for incorporation would cost the company about \$1,000. A corporation, as an artificial entity, could be created only by compliance with the state law, which provided for the granting of corporation charters for definite periods of years, subject to renewal. Thus a corporation would be a creature of local laws, having no existence otherwise. It would have only such powers as were conferred by its charter. It would be an entity wholly separate from the individuals forming and controlling it.

Ownership of the corporation would be represented by those who subscribed capital, in money, goods, or services, and who received shares of the stock which would be authorized and issued upon incorporation. Each stockholder would be entitled to share in the profits according to the proportion of shares of stock he held. His liability, however, would be limited to the amount of his investment; no claim could be brought against a stockholder's private property by creditors of the corporation.

Control of the corporation would be vested in a board of directors elected by the stockholders. The directors, in turn, would appoint officers, such as a president, treasurer, and secretary, to manage the affairs of the corporation subject to the approval of the directors. In the election of directors, each share of stock would have an equal vote. Shares of stock would be readily transferable, by sale or by gift, according to the wishes of the owners of the shares.

As to income taxes, in computing its net, taxable profits, a corporation could deduct from income the salaries paid to its officers, as well as other expenses. On the remaining net profit above an exempt amount of \$2,000, a Federal tax of $12\frac{1}{2}\%$ per year would be payable, in addition to a small state tax. The profits then remaining could be paid to the stockholders in whole or in part as dividends. Such income would be exempt from the individual's normal tax, but would be included in computing the surtax.

The lawyers informed Mr. Ordway that so far as taxes were

concerned, incorporation of his business would be somewhat more burdensome than if he operated as sole proprietor, or formed a partnership.

Although the Ordway Bakery Company had grown substantially, Mr. Ordway and his two sons saw no need of obtaining other business men to aid in the management, nor of securing additional capital.

Questions

1. Summarize the various advantages of (a) an individual proprietorship; (b) a partnership; (c) a corporation.
2. Aside from the matter of taxation, what form of business organization was most suitable for Mr. Ordway's business?

11. INTERNATIONAL CEMENT COMPANY AND MACK TRUCKS, INCORPORATED

Holding-company Organization

The International Cement Company owned the common stock of 13 cement-producing companies operating in the United States and abroad. Since the sole purpose of the organization was to coordinate and control the operating companies, and not to conduct manufacturing operations itself, the International Cement Company was called a holding company. During the first years of the existence of the corporation, the board of directors studied the problem as to whether the enterprise should continue to be developed as a holding company, owning only the common stocks of subsidiary operating companies, or whether the plants in the United States should be consolidated into a single operating corporation.

The domestic plants owned by the International Cement Company were located strategically throughout the United States. Since cement is a heavy, bulky product relatively costly to transport, the area in which one plant can sell its output is limited by the freight rates from the point of production, and by the location of competing plants. The various plants were operated on a competitive basis, that is, each had its own salesmen who endeavored to extend as far as possible the area in which the product of their plant was sold. Each plant was a separate

manufacturing unit which carried on by the same methods all the operations of producing finished cement from the raw materials.

The holding-company form of organization had the advantage of being able to maintain the identity of the individual companies. The inhabitants of the territory served would buy more readily from a local enterprise than from a branch of a large national corporation. The belief existed that the local people had a pride and interest in the success of their home industry, particularly when local men held offices of importance in the company, as was the case with the subsidiaries of the International Cement Company. Each plant was sufficiently large to be able to afford expert technicians and to use the most economical large-scale methods.

The disadvantages of the holding-company form of organization lay in the expense resulting from having 13 separate corporations subject to the license fees of the states of incorporation, in the duplication of executive efforts, and in the expense of the individual companies' overlapping each other's sales territories. The holding company financed its subsidiaries by issuing preferred and common stocks of the International Cement Company. The sale of this preferred stock was hindered by the fact that the assets of the holding-company were securities, and not the operating properties themselves. If the company owned directly the assets of the subsidiaries, it might have sold its preferred stock at a somewhat higher price.

The case of Mack Trucks, Inc., presented a different situation. The company manufactured high-grade trucks and buses, which were sold throughout the United States and abroad under the Mack name. To provide service for Mack owners, Mack Trucks, Inc., had built up an organization of about 90 completely equipped branches, which were housed in leased buildings. This leasing arrangement proved to be expensive; often the cost of the lease amounted to 10% or 15% of the value of the property. Because of this situation, Mack Trucks, Inc., began to purchase land and to build its own branch sales offices and service stations. The cost of the first three units, located in Boston, Los Angeles, and Long Island City was \$2,125,000. To repay itself for these expenditures and to provide funds for acquiring additional locations, the corporation decided to raise

\$3,000,000 by selling to investors first mortgage bonds³ secured by the land and buildings owned and to be acquired. This financing brought up the question as to whether Mack Trucks, Inc., should form a separate company to own the branch properties and to sell bonds secured by them, or whether the money should be obtained by selling bonds secured by the entire properties of Mack Trucks, Inc.

Mack Trucks, Inc., was a holding company owning several subsidiary companies. The principal subsidiary manufactured trucks and buses in plants located in New Jersey and Pennsylvania. Another subsidiary was a sales-financing company which attended to the purchase of installment-sales contracts received in payment for the products of the company not sold outright for cash. A third subsidiary handled foreign sales. These companies had been organized for the reason that under some state laws it was possible for the state to tax all the assets of a company, wherever located, so long as only a part of the assets of the company were in the state which levied the tax.

The organization of Mack Trucks, Inc., was complicated by the formation of these subsidiaries, but the competent management of the business was not disturbed. Accounting reports for the parent company and its subsidiaries showed to the executives of the holding company the results of the operations of the corporation as a whole. The formation of another subsidiary to own the real estate would complicate further the corporate structure of the company, but the step would protect Mack Trucks, Inc., against the possibility of paying state taxes unnecessarily. In addition, the parent company had financed itself principally by the sale of common stock; it had kept itself free of debt in order to be able more advantageously to sell stock as required. The organization of a new subsidiary to sell bonds secured by real estate would enable Mack Trucks, Inc., to remain without any direct debt.

³ First mortgage bonds are secured by a mortgage or deed of trust, which is intended to convey the physical property held under the mortgage to a trustee for the benefit of the bondholders in the event that the corporation fails to pay the interest charges or to repay the principal upon maturity.

Questions

1. Define holding company.
2. What were the reasons for the organization of the International Cement Company as a holding company?
3. Should the operating units of the International Cement Company in the United States be consolidated into a single, operating corporation, or should they be continued as separate organizations owned by the holding company? Why?
4. In what respects is the case of Mack Trucks, Inc., different from that of the International Cement Company?
5. Discuss the advisability of forming a subsidiary called the Mack Trucks Real Estate Company to hold the branch and service-station properties of Mack Trucks, Inc.

CHAPTER VI

COOPERATIVE ORGANIZATION¹

12. INDEPENDENT MOTION PICTURE EXHIBITORS' ASSOCIATION, INC.

Cooperative Buying Organization

In 1928, 80 of the 200 independent motion-picture theaters in New York City and Brooklyn organized the Independent Motion Picture Exhibitors' Association, Inc., a non-profit organization, to buy cooperatively for its members all of the motion pictures which were to be exhibited by them. The reason for this step was that independent theaters in New York City and its surrounding territory had found it increasingly difficult to secure high-grade pictures for first runs. The large theater chains possessed greater buying power and were able to outbid the independent theaters for the first-run rights. The Independent Motion Picture Exhibitors' Association, Inc., had therefore been organized, under the leadership of an experienced organizer of cooperative selling associations, with the object of combining enough buying power to get high-quality pictures for first-run presentation.

The large theater chains were Loew's, Inc., with 52 theaters in Metropolitan New York; and the Keith-Albee-Orpheum circuit, with 30 theaters in the same area. The Metro-Goldwyn-Mayer Pictures Corporation, one of the leading producers of high-grade pictures, was owned by Loew's, Inc. Because of this relationship, Metro-Goldwyn-Mayer gave first-run privileges on the pictures it produced to the Loew theaters, after which other theaters were able to buy them for subsequent runs. Other large producers preferred to sell first to the theaters of the Keith-Albee-Orpheum circuit or to Loew's, Inc., and to the individual

¹ DUTTON, pp. 84-99; MARSHALL, 751-755; MAYNARD, WEIDLER, and BECKMAN, 308-336.

theaters later, because of the larger purchases made by the theater chains. The theaters operated by the two chains were sufficiently numerous and changed their programs frequently enough to permit them to buy most of the pictures of the leading producers.

There was considerable competition among producers in selling their pictures to the chain theaters. This situation enabled the Keith-Albee-Orpheum circuit, for example, to demand that it be given the first-run privileges and that it be protected against any showing by a theater outside the chain. Loew's, Inc., did likewise. The result was that the independent exhibitors were not able to show the pictures of the leading producers until three to six months after their first appearance in the New York area. Since the standing of a theater in its community depended upon whether or not the pictures being shown were new, the chain-theater control of first-run privileges for the best pictures forced the independent exhibitors to show pictures of inferior quality or to abandon the policy of being first-run houses. The general result was that the business of the independent theaters suffered.

The promotion of a cooperative buying unit was undertaken to meet the situation. The two principal objects of the organization were to secure lower prices and more first-run privileges. It was necessary to unite a sufficient number of independent theaters to withhold from the large producers a volume of business large enough to constitute a serious loss of revenue.

The entire group of 200 independent theaters was solicited to join the organization. The necessity of making the membership contract absolutely binding and irrevocable discouraged many prospective members, but 80 theaters joined. They constituted a miscellaneous classification as to the character of their patronage, and as to the nature of the competition in the district in which each was located. The volume of business done by the initial membership of the association, based upon the amount paid for films, represented about one-quarter of the total for the New York area.

Exhibitors who joined the buying association were required to appoint the association their exclusive agent to purchase pictures. The members agreed further not to purchase any pictures direct from distributors, except by special and unanimous

vote of a special committee of the association. Each member was to indicate to the association the kind of pictures he desired, and to give to the association complete information about his past purchases. A description of the operating conditions of each theater was to be filed with the association, notation being made of the following points: the district served by the theater in which protection against previous or simultaneous showing was desired; the frequency of changes of programs; the prices of admission; the description of the theater; whether the theater was in the first-run class; and whether vaudeville features were presented as a part of the program. There was no entrance fee for the charter members of the association, but members taken in during the first week of operations were to pay \$100, and after the first month, \$500.

The association for its services charged each member 5% of the cost of all pictures purchased by him. This amount was payable at the same time payment was made to the distributor for the use of the pictures. At all meetings and elections, each member was to have one vote for each theater operated by him.

The by-laws provided that no member could withdraw voluntarily from membership during any period when he was bound by the provisions of the operating contract.² If his membership were terminated by reason of expulsion, resignation, mutual agreement or otherwise, the exhibitor would continue to be bound by his obligations and would continue to enjoy his rights until the expiration of his operating contract. The board of directors could assign or transfer membership, and could accept as a member the one to whom assignment or transfer had been made.

If a member violated any of the agreements attending his membership, the association might go to the courts and secure a restraining order. In case the action of the offending member had injured the association, the latter was entitled to collect damages and the costs of court action from that member.

The board of directors, which was to have charge of the business of the association, was to be composed of eighteen members elected by the membership of the association under the fol-

² The operating contract was an annual agreement entered into by each member. If a member were expelled from the association, the operating contract continued in force until its expiration.

lowing conditions: Nine directors representing members having nine or more theaters; 5 directors representing members having from three to eight theaters; 4 directors representing members having less than three theaters.

Four members of the board of directors, including the president, were to constitute the executive committee, which was to have detailed supervision over the affairs of the association. The president, two vice presidents, treasurer, and secretary were not required to be members nor were they eligible for membership. They were to be elected by the association membership to hold office for one year. The purchase of films was to be conducted by a special committee composed of two directors and the president. A change of directors could be made from time to time.

The Independent Motion Picture Exhibitors' Association, Inc., was organized upon the basis described. Information was gathered regarding the film needs of the member theaters, and negotiations with distributors for the purchase of pictures were begun. The Metro-Goldwyn-Mayer Pictures Corporation quoted prices 30% higher than members had paid previously as independents. The Paramount Famous Lasky Corporation and the Fox Film Corporation refused to do business with the association on any terms. These distributors apparently feared that the combination of buying power represented by the association would result in lower prices for their pictures in New York City.

The members of the association wanted the pictures of the more important producers. Universal Pictures Corporation and F B O Productions, Inc., were willing to sell to the association, but it was discovered soon that certain members of the association were being approached directly by other large distributors. In order to secure enough pictures, it was necessary for the association committee to buy from the smaller distributors. In this way a strategic bargaining position was attained from which to negotiate with the non-cooperating large producers. The arrangement worked out satisfactorily in the case of most exhibitors, who found that they were paying the same or lower prices for their pictures, and a number of theaters secured better runs than they had been able to obtain previous to the establishment of the buying association.

Some members, however, were afraid the association might not be able to purchase enough pictures to furnish them com-

plete programs for the year and they expressed a desire to withdraw. At this juncture many members of the association were approached by representatives of bankers, by a veteran theater operator, and by the Fox Film Corporation, which was interested in acquiring theaters in Metropolitan New York. Some of the members had not been in good financial condition, so the opportunity to sell appealed to them. Interest in the association diminished, and the officers found it increasingly difficult to arouse the enthusiasm of members in the activities of the association.

Questions

1. What were the reasons for the formation of the association for the cooperative buying of motion pictures?
2. Describe the general characteristics of the situations in which it is to the advantage of buyers to buy cooperatively.
3. What were the reasons for the failure of the Independent Motion Picture Exhibitors' Association, Inc.?

13. CALIFORNIA FRUIT GROWERS' EXCHANGE

Cooperative Marketing and Advertising

The production of oranges, lemons, and grapefruit in California increased rapidly once it had been demonstrated that large groves could be operated profitably. In the period 1903-1911 the number of orange and lemon trees in the state more than doubled; the rate of increase each year during that period averaged $11\frac{1}{2}\%$. Markets had not been expanded quickly enough to consume the greater volume of fruit produced, however, and ruinously low prices had resulted.

Marketing organizations were developed to meet the situation. Since the producers for the most part were too small to support individual sales organizations, cooperative enterprises became numerous. The fruit was gathered at central warehouses, was graded, sized, and packed, and was shipped in car-load lots by the cooperative associations to the consuming markets for sale. In this way the marketing function was organized and performed in a satisfactory way. The pressure of low prices continued, however, and it became evident that something must be done to stimulate the market for citrus fruits.

The California Fruit Growers' Exchange, a cooperative marketing association, was organized in 1905 as successor to the Southern Fruit Exchange, which had been organized in 1893 as a federation of smaller associations. There were several significant reasons for the development of this organization. Growers were dissatisfied with their relations with buyers, commission merchants, and other middlemen to whom they sold their fruit. Prices were falling while production was increasing. Growers were at a bargaining disadvantage in their relations with railroads. Cooperative action in building and operating irrigation projects had proved successful. In this situation the organization and development of the California Fruit Growers' Exchange were encouraged.

The relation of the growers to the central organization of the

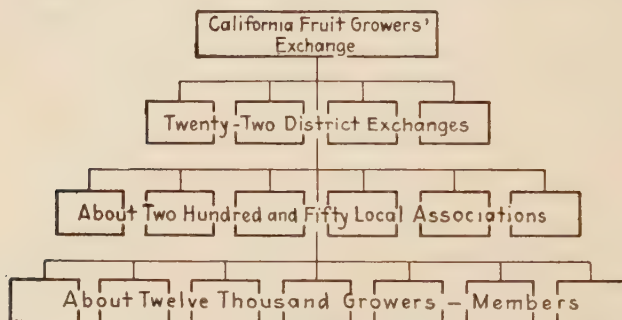


EXHIBIT 1.—Organization of the California Fruit Growers' Exchange.

California Fruit Growers' Exchange is shown graphically in Exhibit 1.

The growers, it may be observed from Exhibit 1, indirectly were members of the exchange. They produced about two-thirds of the citrus fruit grown in California. They were organized in local associations which brought together and packed the crops of its members. It was a common practice for each local association to pool the shipments of its members, sell the fruit without maintaining the identity of the shipments of each individual grower, and divide the proceeds from the sale pro rata. These pools usually were on a monthly basis. The entrance fee and voting rights depended upon the number of acres of orchard

owned by the grower. A board of directors elected by the members supervised the activities of the association. The fruit generally was sold to the district exchange of which the local association was a member, and the net returns secured were distributed to growers upon the basis of the quantity and quality of the fruit sent to the association packing house by each. Growers were required to market their crops through the association under penalty of a fine of 25 cents a box, unless notice to the contrary was given during the first two weeks in September. Membership in the local associations was voluntary and only for one year.

The 22 district exchanges were owned by the local associations, and were operated on a non-profit basis. The function of the district exchange was to keep records of shipments and destinations and to obtain reports concerning market conditions from the central exchange. The district exchange frequently acted as a broker in selling the fruit of its member associations. The payments received by the district exchange for the shipments of particular associations were kept distinct. The board of directors of the exchange consisted of one representative from each local district.

The California Fruit Growers' Exchange, called the central exchange, was made up of the district exchanges and was controlled by them. It maintained sales agents in the principal markets, who pushed the sales of the exchange's fruit. Frequent reports were received from these agents regarding the conditions in each market. Cars in transit could be diverted before arrival in accordance with the instructions of the central exchange, and thus the fruit could be sent to the most profitable markets. The exchange conducted advertising programs, prescribed quotas for the amount of fruit to be picked, sponsored scientific research, and attended to matters concerning the public relations of the industry, such as lower railroad rates and higher protective tariffs.

The principal markets for California citrus fruits were in the middle-western and eastern sections of the United States. The fruit was shipped daily throughout the year in trainloads running on regular schedules. Refrigerator cars belonging to the railroads or to specialized refrigerated express companies were used. Sales were made for cash, and payment was made

through the central exchange. The exchange collected claims for damage and loss in transit.

The volume of business done by the California Fruit Growers' Exchange increased steadily. The figures for sales during the period 1896-1928 are given in Exhibit 2.

EXHIBIT 2.

ANNUAL SALES OF ORANGES, GRAPEFRUIT, AND LEMONS BY CALIFORNIA
FRUIT GROWERS' EXCHANGE AND ITS PREDECESSOR *

(Value f.o.b. Cars in California)

Season ending †	Sales value (000 omitted)	Cars	Season ending †	Sales value (000 omitted)	Cars
1896	\$1,032	2,487	1913	\$13,640	12,432
1897	858	1,789	1914	18,991	28,186
1898	1,671	4,025	1915	19,523	29,812
1899	1,714	3,000	1916	27,676	29,828
1900	3,644	6,039	1917	33,478	36,219
1901	4,799	11,027	1918	36,292	19,214
1902	4,385	7,309	1919	54,628	33,165
1903	4,498	9,621	1920	58,967	34,461
1904	5,063	13,072	1921	56,906	40,959
1905	7,124	14,219	1922	48,446	27,138
1906	9,936	12,884	1923	55,272	45,258
1907	12,269	16,217	1924	50,508	44,266
1908	11,754	17,636	1925	70,237	37,258
1909	13,959	22,954	1926	70,745	46,593
1910	14,832	19,639	1927	85,296	50,468
1911	20,708	28,123	1928	96,582	44,521
1912	17,236	23,648			

* Rahno, Mabel MacCurdy, "History of the California Fruit Growers' Exchange, 1925," p. 70, supplemented by data from *Annual Report*, General Manager, California Fruit Growers' Exchange, 1925-1928.

† Exchange fiscal years ended Aug. 31 to season 1920-1921 and Oct. 31 thereafter.

An advertising program was undertaken by the exchange in 1907. The trade name "Sunkist" was developed as the designation for the first-quality fruit of members, and advertising campaigns presented that name to the public.

The purposes of Sunkist advertising were to increase the total use of oranges and lemons, to create and increase the preference for California citrus fruits, and to improve the condition in which the fruit reached consumers. The health features

of citrus fruits were emphasized. Ways in which to use oranges and lemons were presented to the public. Scientific evidence was used to increase the consumption of citrus fruit and advertisements were run in leading national magazines and in newspapers, calls were made on dealers, many window and fountain displays were arranged, and letters were written to the distributors of citrus fruits.

The undertaking was successful, and the increased volume of fruit produced was taken by the public at prices that permitted the growers to operate with a small profit. The consumption of orangeade and lemonade increased substantially. Sunkist electric juice extractors, sold at cost, aided in this expansion of the market. It was estimated that 4,000 carloads of oranges and lemons were added to the amount consumed each year by the development of these electric extractors. The figures given in Exhibit 2 indicate the extent to which the consumption of California citrus fruit increased, aided by the advertising activities of the exchange.

The initial expenditure for advertising in 1907 had been \$10,000. The amount was increased gradually until in 1925 the total advertising expenditures of the exchange were approximately \$830,000. This sum was at the rate of $4\frac{1}{2}$ cents per box of oranges and grapefruit marketed, and 7 cents per box of lemons. The operating costs of the central exchange, exclusive of advertising in normal years, amounted to about $5\frac{1}{2}$ cents per box. The average costs of the services rendered by the district exchanges were from $1\frac{1}{2}$ to 2 cents per box.

The annual ratios of the total selling and advertising expense to the delivered value of the sales, 1905 to 1928, are stated in Exhibit 3. The figures for sales given in Exhibit 2 were for the value on board the cars at the point of shipment in California. The delivered value, which included transportation costs, was used by the exchange in computing the ratios in Exhibit 3.

The advisability of advertising fruit involved two questions: (a) would it increase demand? and (b) would it reduce the cost of selling? With regard to the first consideration: since the demand for fruit was somewhat elastic, advertising tended to expand the market. The second consideration, however, brought up the fact that fruit growing was not an industry which operated under the law of decreasing costs, that is, the additional

EXHIBIT 3

SELLING AND ADVERTISING EXPENSES, CALIFORNIA
FRUIT GROWERS' EXCHANGE, IN PERCENTAGE OF
DELIVERED VALUE OF GOODS SOLD *

Year ending	Selling and advertising expenses, percentage	Year ending	Selling and advertising expenses, percentage
1905	3.28	1917	3.01
1906	2.89	1918	1.79
1907	2.65	1919	1.62
1908	3.05	1920	2.01
1909	3.44	1921	2.32
1910	3.57	1922	1.69
1911	3.25	1923	2.49
1912	3.53	1924	3.04
1913	2.62	1925	2.40
1914	3.31	1926	2.48
1915	3.72	1927	2.41
1916	3.14	1928	2.30

* Compiled from *Annual Reports*, General Manager, California Fruit Growers' Exchange.

production could not be produced at a lower cost per unit than earlier units had been produced. Advertising, therefore, would not reduce the cost of producing fruit; instead it would raise the grower's costs.

Questions

1. What were the reasons for the development of the co-operative marketing movement in the citrus fruit industry?
2. The strength of the California Fruit Growers' Exchange arises, in large measure, it has been said, from the fact that it has a near-monopoly of supply. If the exchange were half as large, do you think that it would be able to accomplish its ends as successfully as it does while controlling 75% of the crop?
3. What is the exchange able to do to benefit the industry that individual growers and independent distributors are not able to do?

*Citrus Market is expansive.
The citrus fruit demand is not very elastic.*

*Go establish preference for Cal. Fruit
Go extend markets
Go promote reasonable profits
Go encourage sound merchandising with*

14. NATIONAL EXPLOSIVE MANUFACTURERS' ASSOCIATION

Trade-association Organization

The Paxson Company was one of the largest manufacturers of explosives in the United States. It was a member of the National Explosive Manufacturers' Association, which included eight of the fourteen manufacturers of dynamite in the United States. Sales of the eight members were 95% of the total sales of the industry; sales of the Paxson Company were about 35% of the total. The company was sufficiently large to do much of the work that was carried on by the trade association, with the result that certain kinds of work were duplicated. The president of the Paxson Company asked the sales manager to justify the annual expenditure of approximately \$25,000, which could be allocated as a direct cost of belonging to the trade association.

The explosive industry had been expanded abnormally by the World War. Even after a postwar adjustment had been made, there was a total manufacturing capacity of commercial explosive plants in the United States of 540,000,000 pounds. Sales in 1923 had been relatively large, but they amounted to only 341,000,000 pounds; of this volume the Paxson Company sold approximately 120,000,000 pounds. This over-capacity resulted in keen competition. Of the six companies which did not belong to the trade association, one was a consumer company whose output was taken by its stockholders; one was a manufacturing company which sold its output on contract through a member of the association; one was so located that its representatives could not attend conveniently the meetings of the association; and three manufactured products which were not considered standard in the industry.

The National Explosive Manufacturers' Association had been formed to promote the general interests of the industry. An executive secretary had been employed to carry on the activities of the association. The expenses of the organization were met by members upon the basis of the volume of business done; the share of the Paxson Company was 35%. This expense would be offset if the annual sales of the company could be increased 2,000,000 pounds, or if an additional profit of one-quarter cent

per pound on the total output of the plant could be secured. The increase in sales had not been secured, and it could not be ascertained whether the association should be credited for higher prices. There was no exchange of price information among the members, as such exchange was considered illegal by the Federal Trade Commission. There existed the possible danger that the trade association might be attacked by the government under the anti-trust laws, on the theory that it acted in restraint of trade.

There were four groups of ways in which the trade association could be of value to its members: (1) the maintenance of good will among those in the industry; (2) the dissemination to members of information and figures about the trade generally not available to individual companies; (3) the promotion of the prosperity of the companies in the industry; and (4) the improvement of the public relations of the industry. Each of these was summarized, as shown below, with reference to the National Explosive Manufacturers' Association and the Paxson Company.

1. Good Will Within the Trade.—The association enabled the executives of the various competing companies to know each other better, and to work with each other on problems of mutual interest. Companies that were members gave a general impression to other companies of willingness to cooperate, while non-members secured a reputation of an opposite nature.

The Paxson Company already was on good terms with the rest of the trade, particularly with its two most important competitors. If the company withdrew from the association, however, the association would be weakened materially, and possibly an important division in the industry would result. By remaining a member, the company could preserve the friendship of smaller producers who leaned heavily upon the services of the association.

2. Trade Statistics and Information.—The association collected from its members figures on the volume of explosives manufactured, stocked, and sold. The total figures were made available to members for use in controlling operations. Forecasts of conditions and charts of trade movements were published by the association, as well as statistics of activities in other industries of significance to the manufacturers of explo-

sives. The sales manager of the Paxson Company believed that price fluctuations were kept within narrower limits by the statistical and informational service of the association.

The Paxson Company compiled similar information in its own statistical department, so that it was not especially interested on its own account in this activity of the association.

3. Promotion of the Prosperity of the Companies in the Industry.—The National Explosive Manufacturers' Association was influential in standardizing grades, kinds, sizes, packages, weights, and tare in the dynamite industry. The number of grades of dynamite had been reduced from 39,000 in 1914 to 1,500 in 1918. Standards were established for strength, weight, and quality. Information was exchanged on manufacturing methods and materials. The association put a penalty as high as 30% of the billed price on the sale of any non-standard products.

The association conducted educational work among manufacturers having as its purpose the reduction of accidents. Safety rules, safe containers, and rules for fire prevention, were devised. Recommendations were made concerning working conditions and the general welfare of employees. The association regulated safe transportation, storage, and delivery of explosives. The requirement of the association that all members comply with its prescribed safety regulations raised the costs of small competitors to the level of the Paxson Company.

The Paxson Company and its two principal competitors had solved most of the manufacturing problems which came to the attention of the association. The Paxson Company had taken all known precautions for safety, most of which had been devised in its own plant. It had complete chemical control of all its processes, and maintained a research laboratory which, together with those of its two largest competitors, was responsible for most of the improvements in manufacturing methods and materials. These three companies had established the standards which were prevalent throughout the industry.

4. Improvement of Public Relations.—The association recommended model laws for the protection of the public against explosives. It protested against unjust and discriminatory laws affecting the industry, and represented the industry on questions of tariff and taxation. Individual companies were unable

to do these things effectively, as legislatures, courts, and the public would suspect them of selfish motives. The Paxson Company and its two chief competitors had originated most of the legislative and administrative suggestions made by the association. A bureau had been established for the exchange of information on patents and trade-marks. The association endeavored to establish honest and fair practices in the trade; it condemned misrepresentation, misbranding, and unfair competition.

National advertising was conducted by the association to increase the use of explosives, and to educate consumers in the proper methods of using them. The expansion of the market was important in view of the over-production problem in the industry.

Questions

1. Should the Paxson Company have continued its membership in the National Explosive Manufacturers' Association?
2. What are the principal services performed by trade associations?
3. Was there any particular need for a trade association in the explosive manufacturing industry?
4. Is it essential that a trade association include every member of the industry?

PART II

PROMOTION OF BUSINESS ENTERPRISES

CHAPTER VII

OPPORTUNITIES IN BUSINESS ¹

15. KRAMICK FOUNTAIN PEN COMPANY

Development of a New Product

The Todden Company, a large manufacturer of stationery and of leather specialties, had spent several thousand dollars in an effort to perfect a new type of self-filling fountain pen. The company was unsuccessful in its efforts and the idea was abandoned. Permission to continue work on the development, however, was given to Mr. Baker and Dr. Wheeler. Mr. Baker had had several years of practical experience as a factory foreman with companies which manufactured fountain-pen parts. Dr. Wheeler, a member of the medical profession, had unusual mechanical ability; he had fitted up a workshop in the garage at his residence and had made and patented several of the instruments used in his profession. Both men were keenly interested in the possibilities of developing a new type of pen; if they were successful, they proposed to form a partnership to be known as the Kramick Fountain Pen Company.

The fountain pen on which the Todden Company had been working was to be non-leakable; the flow of ink was shut off at the point of the pen by means of an inner cap. Dr. Wheeler constructed a working model of the pen in his home laboratory. In it, however, the flow of ink was stopped in the feed of the pen instead of at the point. In the part of the pen to which the inside rubber sack was fastened and into which the pen point was inserted, there was a separate part attached to a small plunger which was enclosed in a spring. When the cap was on the pen, a shoulder inside the cap pressed down upon this separate part, and the attached plunger was forced into

¹ DUTTON, pp. 100-116; GERSTENBERG, 1-10; LINCOLN, 45-60.

the ink feed; and thus the flow of ink to the pen point was cut off. When the cap was unscrewed, the spring enclosing the plunger forced the plunger out of the feed and the ink was permitted to flow down to the point. A piece of flexible rubber surrounded the plunger and prevented the ink from leaking out around the separate piece.

The new pen was patented by Dr. Wheeler; he was allowed 28 claims² by the U. S. Patent Office. A patent attorney retained in the negotiations said that Dr. Wheeler's pen patent was the strongest of its kind which had been obtained during the preceding 20 years.

A self-filling, hard-rubber fountain pen was composed of the following parts: cap, inner cap, barrel, section, feed, sack, lever mechanism, point, and clip. The barrel was made from hard-rubber barrel stock, shaped on a lathe, and threaded by hand. The cap also was made from hard-rubber cap stock and was shaped on a lathe. The inner cap was cut in proper lengths and pushed into the outer cap. The feed was made from round-rubber-rod stock and was machined on lathes. The lever mechanism was made from flat brass stock and was pressed into shape by special presses. The clip also was made from flat brass stock. The rubber sacks were purchased from the only two companies which manufactured that product in the United States; pen points also were purchased from manufacturers.

There were five large companies and about fifty small companies in the United States which manufactured hard-rubber fountain pens and automatic pencils. There were two non-leakable fountain pens on the market which were constructed so that the point disappeared into the section of the pen when a screw device on the end of the barrel was operated. The high-grade fountain pens ranged in price from \$2.50 to \$5 for pens without gold bands or other forms of embellishment; an extra charge of 50 cents was made for the clip. Fountain pens were sold by manufacturers to large chain-store drug companies, to companies selling advertising specialties and premiums, to wholesalers, and to retailers such as book and stationery stores.

The material and labor costs of producing 100 hard-rubber

² A claim for patent protection was filed upon each special feature of the invention. In this instance the patent office recognized 28 of the features as original and patentable.

fountain pens, made according to the newly patented idea to retail at \$2.50 without the clip, Mr. Baker estimated would be as shown in Exhibit 1. He was of the opinion that this new pen would be as good as any on the market at comparable prices.

EXHIBIT 1

ESTIMATE OF MATERIAL AND DIRECT LABOR COST PER 100 PENS, STYLE 2

Estimated material cost per 100		Estimated direct-labor cost per 100	
Cap	\$ 3.15	Barrel	\$ 4.17*
Inner Cap	0.54	Cap	3.24†
Barrel	3.80	Section	2.57‡
Section	0.68	Plunger	2.35
Plunger	0.60	Feed	3.00
Feed	0.60	Sack	3.00
Sack and Rubber Section....	3.00	Covering Pins	0.25
Lever mechanism	1.50	Set Pin, Feed, Drill, and Pin	3.10
Clip	2.00	Assemble Rubber Connection	2.00
Point (gold)	30.00	Assemble Cap and Barrel..	0.50
		Final Polish	0.25
Total Material Cost.....	\$45.87	Final Inspection and Label- ing	0.50
		Total Direct Labor.....	\$24.93
		Total Material Cost.....	45.87
		Total Cost per 100.....	\$70.80
		Cost per Pen.....	\$ 0.71

* Barrel	† Cap	‡ Section
Facing..... \$0.10	Facing..... \$0.10	Cutting..... \$0.04
Turning..... 2.00	Reaming..... 0.15	Reaming..... 0.08
Buffing..... 0.35	Taping..... 0.10	Turning..... 2.00
Polishing..... 0.15	Turning..... 1.00	Buffing..... 0.12
Chasing..... 0.15	Buffing..... 0.25	Polishing..... 0.08
Stamping End..... 0.03	Polishing..... 0.15	Fitting Feed..... 0.15
Stamping Side..... 0.04	Beveling..... 0.30	Drill for Pin..... 0.10
Threading..... 1.00	Chasing..... 0.15	
Cutting in Two.... 0.05	Stamping..... 0.04	
Facing End..... 0.10	Vent hole..... 0.05	
Stop Groove..... 0.15	Fitting Inner Cap.... 0.75	
Drilling..... 0.05	Cleaning..... 0.05	
	Beveling Inner Cap... 0.15	
Total..... \$4.17	Total..... \$3.24	Total..... \$2.57

Indirect labor and overhead expenses, Mr. Baker estimated, would amount to about the same figure as direct labor. These

estimates, based upon the production of approximately 25,000 pens the first year, would make the cost of each pen 96 cents.

The initial investment required was estimated to be \$1,500. Dr. Wheeler could invest \$10,000 in the enterprise, if sales warranted it; Mr. Baker had no money to invest. Several rubber-turning lathes, a milling machine, a machinist's lathe, electric motor, and several special tools would be required; these would cost approximately \$1,000. An investment of \$300 in hard-rubber stocks and \$150 in metal stock would be sufficient for the production of 1,500 pens. A space large enough to accommodate the equipment could be rented for \$25 a month. Manufacturing operations at the start could be carried on by Mr. Baker, Dr. Wheeler, and two employees.

It was proposed that Dr. Wheeler and Mr. Baker form a partnership and share the profits equally. Mr. Baker would devote his entire time to the new enterprise and would be in charge of production. Dr. Wheeler would be in charge of the financial affairs of the company. He would continue in his profession but would devote two or three hours a day to the affairs of the business and would spend his evenings in office and development work and in the study of new products.

If Mr. Baker and Dr. Wheeler decided to manufacture the pen, they intended to produce it in four sizes, to retail at \$2.50, \$3, \$4, and \$5, respectively, and to be known as style numbers 2, 3, 4, and 5. The higher-priced pens would cost a few cents more for material and would be equipped with better-grade points than were the others. The points ranged in price from \$30 to \$55 per 100. The direct and indirect labor costs for all sizes of hard-rubber fountain pens were practically the same.

The exclusive sales right for the pen was sought by the Todden Company, whose executives were enthusiastic about the working model. The performance of the sales function would involve the placement of orders with wholesalers, with chain-store drug companies, and with other retailers who purchased direct from manufacturers. The Todden Company, if it were granted the sales right, agreed to contract for the total output of the new company on the basis of a production of 25,000 fountain pens the first year, 50,000 the second year, and 100,000 the third year. The company was to pay Mr. Baker and Dr. Wheeler upon the following schedule:

Style 2,	\$1.00
Style 3,	1.20
Style 4,	1.44
Style 5,	1.80

The Todden Company agreed to buy the gold points and other materials for the pens and to store them for the two men.

Questions

1. Do you think the idea of a non-leakable fountain pen would appeal to the buying public? Discuss whether an economic need exists for such an article.

2. In case the company was organized, should it have contracted with the Todden Company for the distribution of the pens? Why?

3. Do you think Mr. Baker and Dr. Wheeler possessed all of the kinds of business ability necessary to manage the enterprise planned?

16. DEATH VALLEY CHEMICAL COMPANY

Development of a New Process

The Death Valley Chemical Company owned part of a salt lake in the desert area of the western part of the United States. The principal commercial constituents of the brine deposits of the lake were borax and potash. The two substances were combined chemically in the deposit, in the ratio of two parts, by weight, of potash to one part of borax. Potash is used extensively in the manufacture of certain kinds of glass, of explosives, and of fertilizers. The common uses of borax are in the manufacture of cleansing agents, antiseptics, and as a fluxing agent in the refining of certain metals and in the manufacture of certain metal alloys. During the World War the high price of potash enabled the company to operate profitably, but beginning in 1919 the decline in the demand reduced prices to a point below the cost of production. The company was forced to discontinue operations.

A leading chemist was employed in 1919 to study the situation to determine whether the enterprise held possibilities of success under peace-time conditions. The consulting chemist,

who had good business judgment as well as technical training, made a detailed analysis of the question. He reported that a more economical separation process than that used previously must be discovered, and that it must be adapted to large-scale operations in order to secure sufficiently low production costs.

The greater portion of the capital invested in the Death Valley Chemical Company was British, and the owners were more patient than are most American capitalists. They decided to adopt the report of the chemist, and the study was begun. In 1922, a satisfactory process had been found, and the company commenced operations with it. In 1923 the new process was upon a commercial basis, and for the next year a large, new plant was planned which was to make use of the new method of separation on a large scale. The new plant was completed in 1927, and the extent of operations increased rapidly. In 1928 the company was producing at the rate of 250 tons of potash and 130 tons of borax per day. The figures for tonnage output, 1921-1928, are given in Exhibit 1.

EXHIBIT 1

ANNUAL TONNAGE OUTPUT, POTASH AND BORAX, DEATH VALLEY CHEMICAL COMPANY, 1921-1928

(000 omitted)

	Potash	Borax	Total
1921	6	3	9
1922 *	14	7	21
1923	29	14	43
1924	32	16	48
1925	36	18	54
1926	30	17	48 †
1927	64	37	104
1928	86	47	138

* Company operated only last 9 months of 1922.

† The low figure is explained by the interruption to operations caused by building the new plant.

The price of potash was determined by an association, or cartel, of German and Alsatian companies which produced approximately 90% of the potash produced in the world. When

the war had isolated this supply, prices in the United States had soared to approximately 10 times the prewar figure. At these prices American producers apparently³ had made huge profits. On account of the relatively small importance in the potash market of the Death Valley Chemical Company, the potash production of that company in 1928 constituting only

EXHIBIT 2

PRICES OF POTASH AND BORAX IN THE UNITED STATES,
1913-1928 *

	Muriate of potash, average price per ton	Borax, average price per pound
1913	\$ 38.34	\$0.038
1914	39.24	0.038
1915	197.64	0.047
1916	388.33	0.065
1917	383.75	0.072
1918	302.50	0.073
1919	157.77	0.073
1920	115.85	0.082
1921	49.49	0.060
1922	33.52	0.055
1923	33.24	0.055
1924	32.16	0.052
1925	34.65	0.050
1926	36.40 †	0.048
1927	36.40 †	0.045
1928	36.40 †	0.025

* United States Department of Labor, *Bul. 415*, Wholesale Prices, 1890-1925, and *Chemical Markets*.

† Average price of potassium chloride.

³ These profits did not take into account proper obsolescence and amortization of production facilities, which could function in the way they did only for the war years. If the cost of the plants had been written off during this time, it is probable that the profits would have changed to losses. A leading chemical engineer commenting upon the earnings record of the company, said, "A plant built for war-time operations is rarely operative as a peace-time plant, and as a business proposition should be almost completely amortized during the period of the war."

6% of world production, its policy was to follow the German prices.

The situation was different in the case of borax. The Death Valley Chemical Company was the dominant factor in the production of borax; in 1928 it produced nearly 50% of the world's supply. The price policy of the company in this field was to reduce prices so long as the effect of so doing was to increase the amount of the commodity bought by consumers. The price policies of the company are reflected in the quotations on potash and borax contained in Exhibit 2.

The increase in the demand for borax resulting from the reduced prices permitted the Death Valley Chemical Company to operate to the limit of its facilities. The new process and the large scale of operations brought about reductions in production costs greater than the reductions in selling prices. Thus the company was successful in the adoption of the new process. A summary picture of the improvement in operations is given in Exhibit 3, which shows the net profits figures of the company for the years 1922-1928.

EXHIBIT 3

NET PROFITS, DEATH VALLEY CHEMICAL COMPANY, 1922-1928

(000 omitted)

1922	\$ 814*
1923	125
1924	89
1925	55*
1926	12*
1927	761
1928	1,557

* Loss.

Questions

1. What were the differences, if any, between the problems arising out of the adoption of the new separation process, and the problems accompanying the establishment of a new enterprise such as the Kramick Fountain Pen Company, pages 89 to 93?

2. Describe the service rendered the Death Valley Chemical Company by the consulting chemist. In what ways does the chemist differ from a promoter?

17. SEARS, ROEBUCK & COMPANY**Adoption of a New Distribution Policy;
Establishment of a Chain of Retail Stores**

Sears, Roebuck & Company carried on a large mail-order business. The substantial growth of the company had been based on sales to agricultural communities, which were served poorly by country stores. The catalogue of the company, which was distributed widely among the rural population, enabled its readers to select from a large variety of articles, many designed according to current city styles and all offered at low prices. These facts accounted for the expansion of the business.

In 1925, the executives of the company saw that a change was taking place in the market served by the mail-order houses. Improved roads and automobiles permitted the residents of agricultural and suburban communities to go to the larger towns to purchase articles which previously had been ordered from mail-order catalogues. The agricultural population was declining in numbers as a result of increased per capita production by the rural population permitted by the development of labor-saving machinery. The decline was accentuated by the tendency of young people born on farms to go to the cities. The sale of style goods by mail was falling off, as larger stores, which offered a wide line of up-to-date merchandise, were increasingly accessible to agricultural communities. The sales of the company had been growing steadily, but a continuation of the growth could not be expected if the company restricted itself to the markets in the agricultural communities. To meet the situation, the executives of Sears, Roebuck & Company decided to supplement their mail-order business with a chain of retail department stores located in the medium-sized and large cities of the United States.

The executives reasoned that the natural decline of the mail-order business in rural districts could be offset by the establishment of retail stores. In some cases the retail stores would bring additional business to the mail-order business of the company. The stores would carry only the more important articles listed in the catalogue. Once a customer had visited a Sears, Roebuck & Company retail store, and had observed the quality

of merchandise, he might order other merchandise, shown in the mail-order catalogue, but not exhibited in the store.

A large amount of new business, as well as a stimulation of the mail-order business, was expected to result from the establishment of the retail stores. The company was confident that the stores would not compete with the mail-order business, as the latter came principally from agricultural communities, while the retail units were to serve the city districts. A few retail stores that had already been operated in conjunction with the mail-order warehouses, had been successful. The economy of operating retail-distribution enterprises in chains had been demonstrated by the rapid growth and success of chains of grocery, drug, dry-goods, five- and ten-cent, and department stores. Montgomery, Ward & Company, the second largest mail-order house, undertook the establishment of a chain of retail stores at about the same time as Sears, Roebuck & Company.

The new stores, by means of which Sears, Roebuck & Company planned to capitalize on its name and expand its market were of two types, Class *A* stores and Class *B* stores. Class *A* stores generally were located in cities with populations of 150,000 or more. Of the 35,000 items in the catalogue, about half were stocked in the Class *A* stores. Most of these stores carried style goods; for example, they displayed about 75% of the catalogue line of coats in the fall season of 1928. A typical list of departments for a Class *A* store was as follows:

Furniture	Infants' wear
Stationery	Paint
Jewelry and silverware	Men's furnishings
Sporting goods	Lighting fixtures
Drugs	Crockery
Hardware and household supplies	Cotton piece goods, domestics
Musical instruments	Floor covering
Luggage	Lingerie
Silks and woolens	Boys' clothing
Shoes	Plumbing and heating
Hosiery	Men's clothing
Ladies' ready-to-wear	Pianos and phonographs
Corsets	Toys
	Wall paper

Linens, towels	Radios
Stoves	Millinery
Blankets, draperies	Candy and tobacco
Notions	Tires
Washing machines	Auto accessories

Class *B* stores were located in towns with populations of 50,000 or more, though there were a few exceptions. A typical Class *B* store had the following departments:

Sporting goods	Plumbing and heating
Hardware and household supplies	Work-clothing
Stoves	Toys
Blankets	Wall paper
Washing machines	Radios
Auto accessories	Tires
	Paint

In each store the merchandise selected for display was chosen with regard to the type of community in which the store was located. Some catalogue merchandise was excluded because it was not adapted to urban requirements. On the other hand, there were some items, called "specials," carried by the retail stores that did not appear in the catalogue.

The selection of cities in which to establish the new stores had been a major consideration. The company decided to make each mail-order distribution warehouse the control point for the stores in its district. These central warehouses, from which were shipped goods ordered by mail, were located in Chicago, Los Angeles, Philadelphia, Kansas City, Dallas, Memphis, Atlanta, Boston, Minneapolis, and Seattle. The retail sales department of each of these warehouses was designated as a Class *A* store, and, in some of the cities named, one, two, or, as in the case of Chicago, three more stores were established. Other stores were set up in cities not far distant from the control points. The distance of the retail stores from the control point gradually was being extended.

This new undertaking by Sears, Roebuck & Company involved two groups of problems: (1) the number and location of the stores, together with the lines of goods to be carried; (2)

the management and central control of the individual stores. The latter presented the greater difficulty, for it was necessary to train or secure responsible local managers, and in each instance it was necessary for the local manager to secure a staff of newly recruited employees. The store managers were supervised readily from the division manager's office, located in the district warehouse of the company.

The first matter, the number and location of the stores, depended upon the speed with which the management wished to carry out its policy, upon statistical records of the numbers and kinds of people in the area, and upon the reports of store-location engineers as to the most desirable part of a city in which to locate.

Selection of a site within a city was based on the requirement of convenience to customers. Executives of the company favored sites that were located outside of the shopping centers of the city and which had good transportation facilities and reasonably priced land. The company wanted to make it possible for customers both to avoid traffic congestions in coming to the stores, and to park their cars in the free parking space to be provided by the company. A location on an automobile artery was considered more desirable than one on a street-car artery. The company had found through experience that the percentage of actual buyers among those entering its retail stores was higher than in the case of the average department store; for that reason the executives disregarded the locations of other chain stores and shopping centers. An additional reason for seeking locations away from shopping centers was to attract men; some of the company's best values were in men's lines. The executives of the company believed that men would come to a store out of the shopping district, especially if it were near automobile transportation.

The company realized that it was entering a field that already was served by other retail distribution agencies. It believed, however, that there was an opportunity to drive in a wedge, aided by its mail-order reputation, and to establish itself in a substantial market. It would not compete materially with high-class specialty stores, but with the middle and lower grades of goods handled by large department stores, and, while women constituted the larger part of the clientele of department stores,

Sears, Roebuck & Company hoped to secure the patronage of men as well. In the smaller cities, the company would compete, directly, with department, dry-goods, shoe, hardware, and chain systems operating stores in those lines.

Questions

1. What were the reasons for the establishment of the chain of retail stores by Sears, Roebuck & Company?
2. Were there any alternative opportunities which the company might have investigated in its effort to offset the prospective decline in its business?
3. What executive and sales talents are required in the operation of retail stores that were not required in the conduct of the mail-order business?
4. Discuss the advisability of the establishment of the chain of retail department stores by Sears, Roebuck & Company.
5. Comment upon the decision of the executives of the company to locate their Class A stores outside of the established shopping centers.

CHAPTER VIII

PRELIMINARY SURVEY METHODS ¹

18. ROLLO FISHERIES COMPANY

Market Analysis

The Rollo Fisheries Company, located in Rockland, Me., was engaged in the preparation and distribution of salted, dried, smoked, and canned fish. Operations had been moderately successful, but the executives of the company feared that meats were being consumed to an increasing extent in preference to fish. The addition of fish cakes, already prepared for use by the housewife and packed in cans, was being considered, as fish in that form did not compete directly with meat, and a new market which had hitherto been neglected would be entered. Before deciding to prepare and distribute the new line, however, the officials of the company wished to determine in advance as accurately as possible the nature and extent of the market for the fish cakes. An advertising agency was employed to conduct a market analysis to secure this information.

The properties of the Rollo Fisheries Company included landing wharves, cleaning and drying yards, smoke-houses, packing plants, a fish-meal plant, a shop for repairing sails, and a factory for the manufacture of seines and nets. The company controlled a subsidiary company which owned 61 fishing vessels, and shared with fishermen the ownership of 27 others. The volume of sales of the company placed it among the leading companies in the industry.

The principal kinds of fish caught by the fishermen of the Rollo Fisheries Company were cod, haddock, hake, pollack, cusk, mackerel, herring, and halibut. Cod, pollack, haddock, cusk,

¹ DUTTON, pp. 117-130; GERSTENBERG, 11-44.

hake, and halibut were caught during the months from March through September; mackerel was caught during September and October; herring was caught during November, December, and January. The company also purchased clams from independent fishermen during the winter months.

The operations for packing all fish consisted of splitting, cleaning, curing, skinning, removing bones, and either drying, smoking, or canning. All fish which were brought in were put in brine to be kept until they were packed. This practice enabled the company to operate with little variation throughout the year. Dried, unskinned fish was sold in the export market. For the United States markets, codfish, haddock, fish roe, smoked herring, and clams were packed in cans. Smoked finnan haddie and smoked herring were packed in glass containers. Salt cod, haddock, and halibut, from which the skin and larger bones had been removed, were packed in 20- and 40-pound boxes. Boneless salt cod was packed in one-pound and half-pound boxes and packages. The company had marketed fish in packages since 1899. It had advertised nationally since 1902, so that the brand name had become well known in the United States.

The new product which the Rollo Fisheries Company was considering adding to its line of products was a mixture of potato and codfish, to be cooked at the company's plant and ready, on opening, for the housewife to fry. It could be produced the year round, because the codfish was preserved in brine, and the potatoes could be kept in cold storage when they were not currently available in the market. When the product was sealed in the can, it would keep indefinitely. No other manufacturer had put on the market a product of this type.

The market analysis requested of the advertising agency was to be used by the executives of the Rollo Fisheries Company in deciding what the prospective sales of the prepared fish cakes would be, and in deciding at what retail price the cans could be sold. If this information were secured in advance, the company could plan for manufacturing facilities of the right size, and the profitability of the undertaking could be estimated before large advertising and developmental expenses were incurred. The agency was limited to \$5,000 in making the analysis.

The information the agency wished to secure was as follows:

EXHIBIT 1

QUESTIONNAIRE, ROLLO FISHERIES COMPANY

State City Date of call.....
 Grocer's name Address.....
 Consumer's name Address.....
 Date to call again..... Best time to call.....

First Visit

1. Do you like fish? Yes..... No.....
2. What kind of fish do you buy most frequently?
3. Why do you buy this kind of fish?
4. Is the fish you buy most frequently fresh, canned, salted or shredded?
5. If you buy codfish, what is the name of the brand?.....
6. How often do you buy fish?
7. When you have fish, is it the main part of the meal? Yes.... No....
8. How many days each week do you eat meat?
9. Do you serve meat at any meal besides dinner? Yes..... No.....

Second Visit

10. How did the fish cakes taste to you?
11. Tell what you think of their taste.....
12. Did the fish cakes taste better to you than
 - a. Fresh fish Yes..... No.....
 - b. Canned salmon Yes..... No.....
 - c. Salted cod Yes..... No.....
 - d. Shredded cod Yes..... No.....
 - e. Any other variety
13. a. Did you find that the fish cakes made a full meal? Yes....No....
 (By a "full meal" is meant, did the fish cakes satisfy, as meat, pork and beans, or any other main dish at dinner would satisfy?)
 b. For how many persons would they make a full meal?.....
 c. How much more would you need for a full meal?
14. How many persons do you generally serve at the table?
15. What quantity of meat or meat substitutes is necessary for a meal? ...
16. a. How much do you usually spend for fish at one time?
- b. How much for meat?
17. a. How many in your family like fish?.....
- b. How many do not like fish?
18. Why don't you buy fish more often?
19. Would you buy these fish cakes again? Yes..... No.....
20. How much would you be willing to pay for another can the same size as the one you had?
21. Additional information.

- a. The percentage of people in the different parts of the country who ate fish.
- b. How frequently they ate fish.
- c. The reasons for eating fish.
- d. The prices people paid for fish.
- e. The opinion of the public regarding prepared fish cakes.

In order to get this information, the agency decided that it would be necessary to distribute samples of the new product, and to secure from each person to whom a sample was given, replies to the questionnaire shown in Exhibit 1.

Field agents were to be used to secure replies from all persons to whom samples were sent. The agency conducting the market analysis selected a number of cities, half of them on or near the seacoast and half inland, in which to conduct the investigation. The cities were not chosen as representative of any district or state, nor of any industrial or agricultural community. The possibility of sending the questionnaires in proportion to the population of the different cities was not considered.

The conduct of the investigation in each city was placed in the hands of a college professor. He obtained the names of the customers of two grocery stores which, he believed, served all classes of persons. Women were employed to interview the customers with the questionnaire. The investigator first called upon her listed housewives and obtained answers to the first nine questions listed in Exhibit 1. After the interview, the investigator informed the housewife that her grocer would send her a can of prepared codfish cakes, which she was to try. Arrangements were made for the second interview, which was to follow the trial. At the second interview the additional information brought out by the balance of the questions in Exhibit 1 was secured. Usually the investigator permitted the housewife to fill in her own answers. Answers to all questions were not received at every interview.

The results of the questionnaires were tabulated and a report was rendered, which is summarized below. The figures were divided by states; only the totals are given here.

Question 1. "Do you like fish?"

Replies:

4,125 people, or 86.8%, said "Yes," and 627 people, or 13.2%, said "No."

Question 2. "What kind of fish do you buy most frequently?"

Replies:

504 people said salmon, 235 said cod, 190 said tuna, 155 said mackerel, 107 said halibut, and 477 said various other kinds of fish.

Question 3. "Why do you buy this particular kind of fish?"

Replies:

Like it best	588
Easy to get	127
Reasonable price	88
Easy to prepare	76
Superior flavor	61
Most meat, no waste	39
Good for salads	37
Habit	11
Other reasons	8

Question 4. "Is the fish you most frequently buy, fresh, canned, salted, or shredded?"

Replies:

Fresh	672
Canned	420
Salted	147
Shredded	47
Smoked	7

Question 5. "If you buy codfish, what is the name of the brand?"

Replies:

	Number	Percentage
Rollo	160	16.3
Rotgers Brand	33	3.4
Rogers	28	2.9
Penn	28	2.9
Park	27	2.9
Polar	23	2.3
Monogram	14	1.4
All others	88	8.9
Do not use	329	33.5
Do not know	228	23.3

Question 6. "How often do you buy fish?"

Replies:

	Number	Percentage
Twice a week or oftener.....	154	12.9
Once a week.....	517	43.4
Once every two weeks.....	196	16.4
Once a month.....	198	16.6
All other responses.....	93	7.8
Did not answer.....	35	2.9

Question 7. "When you have fish, is it the main part of the meal?"

Replies:

1,089 people answered "Yes," and 91 answered "No."

Question 8. "How many days each week do you eat meat?"

Replies:

	Number	Percentage
7 days	352	29.5
6 days	329	27.6
5 days	134	11.2
4 days	95	8.0
3 days	128	10.7
2 days	40	3.4
1 day	16	1.3
Did not answer	99	8.3

Question 9. "Do you serve meat at any meal besides dinner?"

Replies:

446 people answered "Yes," 650 answered "No," and 97 did not answer.

Question 10. "How did the fish cakes taste to you?"

Replies:

Description	Number	Percentage
Very good	504	44.2
Good	444	37.2
Fair	59	4.9
Not very good	7	.6
Not good	106	8.9
Bad	32	2.7
Spoiled can	20	1.7
Did not answer	21	1.3

When the results of questions 10 and 6 were compared it was found that practically all of the people who ate fish frequently liked the fish cakes. Also when the results of questions 10 and 1 were compared, it was found that practically all of the people who liked fish liked the fish cakes.

Question 11. "Tell what you think of their taste."

Replies:

	Percentage	
Favorable	849 or	70.1
Unfavorable	204 or	16.8
Did not answer	116 or	9.6
Spoiled cans	20 or	1.7

Question 12. "Did the fish cakes taste better to you than canned salmon, salted cod, or shredded cod?"

Replies:

36% said fish cakes tasted better than salmon.
 55% said they tasted better than salted cod.
 56% said they tasted better than shredded cod.

Question 13. "For how many persons would the fish cakes make a meal?"

Replies:

Indicated that the sample can contained more than enough for two people.

Question 14. "How many persons do you generally serve at the table?"

Replies:

Showed that the majority of consumers served 2, 3, and 4 persons.

Question 15. "What quantity of meat or meat substitute is necessary?"

Replies:

995 people consumed on the average 6.17 ounces per person during the principal meal of the day.

Question 16. "How much do you usually spend for fish at one time?
 How much for meat?"

Replies:

The average amount spent for fish was 11.42 cents per person, and for meat, 14.42 cents.

Question 17. "How many in your family?"

Replies:

21 families of 1 person.
 238 families of 2 persons.
 238 families of 3 persons.
 250 families of 4 persons.
 162 families of 5 persons.
 124 families of 6 persons.
 121 families of more than 6 persons.

Question 18. "Why don't you buy fish more often?"

Replies:

	Number	Percentage
Not available	255	28.0
Don't care for it.....	246	27.0
Buy often enough	158	17.3
Prefer meat	80	8.8
Tire of it	56	6.1
Trouble to prepare	36	4.0
Habit	33	3.6
Too expensive	22	2.4

Question 19. "Would you buy Rollo Tasty Fish Cakes again?"

Replies:

807 people said "Yes," and 262 said "No."

Question 20. "How much would you be willing to pay for another can the same size as the one you had?"

Replies:

Price, cents	Number	Percentage
0 to 10	102	8.9
11 to 15	404	35.2
16 to 20	286	24.8
21 to 25	91	8.0
Over 26	18	1.5

Questions

1. Criticize the market analysis conducted by the advertising agency.
2. What uses could the company have made of the information contained in this report?

19. BLACK HAWK AIR TRANSPORT COMPANY

Costs and Capital Requirements

Early in 1927, a small group of citizens of Buffalo, N. Y., proposed that an air line for the transportation of passengers, mail, and express be established between their city and Cleveland, Ohio. A preliminary study was undertaken to determine whether the prospective profits justified materializing the project immediately or whether it was advisable to await mechanical improvements in the industry and an increased patronage of flying.

The promoters of the company, which was to be called the Black Hawk Air Transport Company, were leading business men of the city of Buffalo, who wished to see their city keep pace with other localities in the establishment of air-transport services, and who had confidence that moderate or large profits would come to them from the undertaking. The distance between Buffalo and Cleveland as an airplane flies is about 175 miles. There are no natural barriers, such as high mountains or exceptional storm areas on the route. Both cities had accessible airports, with suitable ground equipment and a city bus connection.

Prevailing winds in the United States are from the west to the east; this makes an east-and-west schedule more difficult to maintain than a north-and-south schedule; and faster planes are required. The course from Buffalo to Cleveland, however, is southwest.

The preliminary study of the undertaking involved two considerations: the revenues and expenses that might be expected, and the amount of capital required. Information collected on these subjects is reviewed briefly below.

PROSPECTIVE REVENUES

The experience of one newly organized air transportation company, similar in many respects to the proposed Black Hawk Air Transport Company, was that losses of from \$25,000 to \$50,000 were incurred the first year, which was 1927; expenses equaled revenues the second year; and in 1929 profitable operations were expected. The unfamiliarity of the public with air

transportation was said to have accounted for the initial losses. The sources of revenue were four: passenger, mail and express transportation, and casual flying. The officers of the Black Hawk Air Transport Company made the following estimates regarding each of these kinds of business in the proposed operations between Buffalo and Cleveland.

Intercity Passenger Service.—Excellent railroad service existed between Buffalo and Cleveland. The fastest trains made the trip in four hours and the average time was four hours, thirty-five minutes. The distance could be covered by commercial airplanes in from one and one-half hours to two hours, but city connections at the terminals would consume another hour. The saving in time by airplane, accordingly, would be one or two hours. There was a good deal of travel between the two cities, and as soon as flying became more popular, a definite increase in business could be expected.

Other enterprises which had undertaken to develop passenger business had met with varied success. The lines of the Western Air Express between Los Angeles and Salt Lake City and between Los Angeles and San Francisco had developed a substantial passenger traffic. Over the first-named route, the airplane made the trip four times as fast as the train and the fare was only twice the train fare. In other sections of the country, however, where train service was rapid and cities were not far apart, the air-transportation companies had had difficulty in securing a volume of passenger traffic sufficient to justify the establishment of permanent service.

Mail Service.—The proximity of the two cities gave little advantage to the sending of mail by air between them. In the case of air mail for points west, however, there would be a certain amount of business, provided a schedule was maintained which made good connections with the transcontinental and other through services. Scarcely any idea could be secured as to the amount of mail that would be offered the company in case it secured the post-office contract. The average daily load each way of air mail between New York and Chicago for the early months of 1927 had been approximately 600 pounds. This was carried at the rate of 10 cents per half-ounce.

Payment for carrying air mail was regulated by Federal statute. Contracts were given to the lowest bidder; no rate was

to exceed \$3 per pound for the first 1,000 miles or less, and 30 cents per pound for each 100 miles or fraction thereof.

The contracts held by the companies carrying air mail west from Boston were as follows:

Boston to Los Angeles	
	Rate per Pound
Colonial Air Transport, Inc., Boston to New York.....	\$3.00
National Air Transport, Inc., New York to Chicago.....	1.24
Boeing Airplane Company, Chicago to Salt Lake City.....	1.50
Western Air Express, Inc., Salt Lake City to Los Angeles..	3.00
<hr/>	
Total Cost to Government to Carry 1 Pound of Air	
Mail from Boston to Los Angeles.....	\$8.74

Boston to San Francisco	
Boston to Chicago	\$4.24
Chicago to San Francisco, Boeing Airplane Company.....	3.00
<hr/>	
Cost to Government	\$7.24

Boston to Kansas City and Dallas	
Boston to Chicago	\$4.24
Chicago to Kansas City and Dallas, National Air Transport, Inc.	3.00
<hr/>	
Cost to Government	\$7.24

Express Service.—The development of air-express traffic between any two cities depended to a large extent upon other means of transportation available. The Western Air Express, Incorporated, covered an extremely profitable route in operating between Salt Lake City and Los Angeles, since the train communication between the two points was not rapid. Similarly, the line between San Francisco and Los Angeles could be covered four times as rapidly by airplane as by railroad.

Casual-flying Service.—Casual flying consisted of special pleasure “hops” or sight-seeing trips, each of which generally was short and for which a fairly high charge was made. Seldom was casual flying attempted in more than six months of the year, and then only when the weather was favorable. A plane could

make four of these trips an hour, but upon the average a plane would make no more than 400 casual flights a year. At \$20 per capacity flight, the annual revenue from this source would be \$8,000 per plane. Allowing for 90% capacity, casual-flying revenues would amount to \$7,200 per plane.

The determination of an approximate figure representing prospective revenues of the Black Hawk Air Transport Company was exceedingly difficult. Nothing of practical value could be ascertained until the line was established, and the passenger, mail, express, and casual-flying business was developed. The experience of other air-transport companies had been various; a few had received large revenues, but many had taken in very little. Estimates of expenses, however, could be made with considerable accuracy.

PROSPECTIVE EXPENSES

The expenses of the undertaking planned by the Black Hawk Air Transport Company would depend upon the number of flying hours during which planes were operated and the cost per flying hour. The distance flown daily upon one trip each way between the two cities, allowing for extra distance on account of deviations from course, would be about 400 miles. Upon a monthly basis, this schedule flying would amount to about 12,000 miles. At 100 miles per hour, which was a fair speed to assume, the company would operate 120 flying hours per month. Casual flying would mean about 25 additional flying hours.

The costs of operation per flying hour were estimated to be \$29.30. The way this figure was reached is shown in Exhibit 1.

The number of flying hours per month, 120, multiplied by the operating cost per flying hour, \$29.30, gave \$3,510. With 10% added for emergency, a total of \$3,861 was secured for the total operating costs per month for schedule flying. For casual flying, the figure of \$700 was considered an adequate expense estimate for 25 flying hours per month. Total operating costs per month, accordingly, would be approximately \$4,560 or about \$55,000 per year.

In addition to operating expenses there would be overhead costs. Estimates of these charges, on the basis of the service planned between Buffalo and Cleveland, are given in Exhibit 2.

EXHIBIT 1.

ESTIMATED OPERATING COSTS PER FLYING HOUR BLACK HAWK AIR
TRANSPORT COMPANY

Operating Costs

Direct Flying Costs per Hour

Gasoline	\$4.95
Oil	0.35
Motor Maintenance	2.50
Ship Maintenance	3.50
Pilot's Flying Pay	5.00

Total Direct Flying Costs per Hour..... \$16.30

Indirect Flying Costs per Hour

Motor Depreciation	\$4.50
Ship Obsolescence	3.50
Insurance	5.00

Total Indirect Flying Costs per Hour..... \$13.00

Total Operating Costs per Hour..... \$29.30

EXHIBIT 2.

ESTIMATED OVERHEAD COSTS PER YEAR, BLACK HAWK AIR TRANSPORT
COMPANY

General Manager	\$10,000
Chief Pilot	6,000
Two Pilots (base pay*)	4,000
Three Mechanics and One Workman.....	7,800
Two Traffic Solicitors.....	5,400
Stenographers	1,500
Office Rents	4,200
Hangar Rents	3,000
Ground Transportation	2,400
Telephone, Telegraph, etc.....	500

Total Overhead Costs

* In addition to this base pay, flyers received about 5 cents a mile for daylight and ten cents a mile for night flying. For casual flying they received an additional \$5 an hour.

Total annual expenses, it is observed from Exhibits 1 and 2, would be as follows:

Operating Costs	\$55,000
Overhead Costs	45,000
<hr/>	
Total Expenses	\$100,000

PROSPECTIVE CAPITAL REQUIREMENTS

The amount of capital required for the undertaking proposed by the promoters of the Black Hawk Air Transport Company depended upon the equipment needed and the working capital that would be necessary.

For equipment, it was estimated that medium- or low-priced, single-motored airplanes, which had little reserve power and a maximum lifting capacity only slightly above the normal load, could be used satisfactorily. Such equipment was adequate by reason of the fact that there were no high mountains on the route and that severe storms were not frequent. The cost of suitable airplanes would be about \$11,000 each. A plane of this class would go 100 miles an hour and carry about 800 pounds. (On the transcontinental lines, there are needed, in the Rocky Mountain region, planes which can attain an altitude of at least 12,000 feet. Such planes were more expensive.) In general, the prices of planes varied from \$3,000 for a one-motored plane, having little lifting power and average speed, to \$40,000 for trimotored planes.

One machine would be sufficient for these purposes: daily transportation of passengers, mail, and express, between two cities not over 300 miles apart. In establishing air service, however, at least two planes were generally purchased, the extra one for use in case of an accident or other exigency. Occasionally, a company purchased three planes, which permitted it to keep a spare machine at each terminal. Such planes were not idle at all times; in addition to being emergency planes, they were used to take passengers for short local flights, and for other revenue-producing purposes.

In addition to expenditures for the aircraft required, air-transport companies generally invested further capital in a spare motor, spare parts, and tools. One company with a 250-mile route had made, for instance, an expenditure of \$9,500 for the following items: extra motor, \$4,500; tools and spare parts of motor, \$3,500; other tools and spare parts for aircraft, \$1,500.

This same company had decided that it did not need regular radio or night-flying equipment for its short route. Night-flying equipment cost approximately \$500 per machine. The cost of installation was about \$350 additional. The airports at Buffalo and Cleveland were equipped with radio landing beacons. Office equipment for the terminals of the Black Hawk Air Transport Company would require about \$1,000.

Working capital was needed to finance the current operations of the company. In the beginning, this capital had to be furnished by the promoters, as initial operations would not supply enough revenues to pay salaries and operating expenses. The amount of the requirements for working-capital purposes was difficult to determine. It was estimated (p. 115) that expenses the first year of operating would be about \$100,000. If revenues of \$50,000 were collected, the resulting loss would come out of the working capital. Enough working capital would have to be left to finance operations during the second year, too, and to absorb any loss. It was important that enough working capital be available to permit continuous operations for at least two years. At the end of that time the enterprise should prove its ability to support itself, or else it should be discontinued.

Questions

1. Discuss the probability of profitable operations of the enterprise proposed by the promoters of the Black Hawk Air Transport Company.
2. How much capital do you think should be raised if the company is organized?
3. What are the strong and weak points of the preliminary survey described in the case?

20. MACGREGOR CHOCOLATE COMPANY

Economical Size of a Manufacturing Enterprise

Mr. MacGregor had gained considerable experience in the candy business as the result of five years of service as treasurer of a successful chocolate manufacturing company. He had saved \$20,000 and was considering establishing his own candy-manufacturing business. Four of his friends also had expressed their willingness to invest \$20,000 each in such an undertaking.

Previous to being made treasurer, Mr. MacGregor had sold hard and soft candies to wholesale and retail distributors of confectionery. With this experience he believed himself capable of operating a candy factory successfully. He was undecided, however, whether to manufacture chocolates, usually called soft candy, or hard stick candy. He was undecided also whether to manufacture on a large scale or on a small scale.

The production of confectionery in the United States, in 1923, was distributed among the various sizes of establishments in the proportions shown in the following figures.

SIZE OF ESTABLISHMENTS BY VALUE OF PRODUCTS, UNITED STATES, 1923 *

Class of establishments according to value of products	Establishments		Wage-earners		Value of products	
	Number	Percentage of distribution	Average number	Percentage of distribution	Amount	Percentage of distribution
All classes.....	2,014	100	63,485	100	\$366,256,000	100
\$5,000 to \$20,000.....	702	34.8	1,515	2.4	\$ 7,754,000	2.1
\$20,000 to \$100,000...	713	35.4	6,050	9.5	33,187,000	9.1
\$100,000 to \$500,000..	438	21.7	19,564	30.8	102,924,000	28.1
\$500,000 to \$1,000,000	87	4.3	11,471	18.1	60,855,000	16.6
\$1,000,000 and over...	74	3.7	24,885	39.2	161,535,000	44.1

* Biennial Census of Manufactures, 1923, p. 89.

The manufacture of soft candy did not require the investment of a large amount of capital. Mr. MacGregor knew of several companies which had started production with investments ranging from \$3,000 to \$7,000. He was of the opinion, therefore, that he could enter the soft-candy business successfully on a limited scale with an investment of \$5,000. Usually a manufacturer of soft candy started operations in a kitchen with a small amount of capital invested in stoves and cooking utensils. As a result there were not many costs other than those for raw materials, labor, and selling. Mr. MacGregor found that he could purchase for approximately \$1,000 sufficient second-hand equipment to manufacture 1,000 pounds of candy a week. Minimum operating expenses for this amount of product he estimated would be \$475, divided as shown in Exhibit 1.

EXHIBIT 1

ESTIMATED OPERATING EXPENSES, MACGREGOR CHOCOLATE COMPANY

(Based on a production of 1,000 pounds of candy a week)

Rent of Factory Space.....	\$25.00
Salary of Two Helpers, at \$30	60.00
Salary of One Salesman to Call on Wholesalers and Retailers	40.00
Salary of Proprietor	50.00
Insurance, Light, Heat, Taxes and Miscellaneous.....	25.00
Raw Materials	275.00

Total Operating Expenses per Week..... \$475.00

Total Operating Expenses per Month ($4\frac{1}{2} \times \$475$). \$2,137.50

The soft candy could be sold for 50 cents a pound, according to the estimate Mr. MacGregor made, based upon his experience. He expected that he could make weekly sales of \$500, leaving a net profit of \$25 or 5% of net sales. Sales for a month on this basis would amount to \$2,250, and net profits, to \$112.50.

The manufacture of soft candy upon a large scale also was considered by Mr. MacGregor. While there were many small concerns, like the undertaking proposed above, there were also large manufacturers of chocolates. Most small candy factories were dirty and unattractive, and accordingly the leading retail distributors were prejudiced against their products. If Mr. MacGregor erected a large, modern, sanitary factory, with attractive offices, he was confident that he could sell his candy more easily than if he operated a small plant.

Building contractors were consulted to determine the probable cost of a suitable plant having a capacity of 20,000 to 25,000 pounds a day, and located favorably with reference to railway service and labor supply. The report of the contractors is summarized in Exhibit 2.

EXHIBIT 2

ESTIMATED PLANT COSTS, SOFT CANDY FACTORY

(Capacity 20,000 to 25,000 pounds per day)

Site	\$ 20,000
Building	230,000
Cold Storage Plant and Equipment.....	200,000
Machinery	80,000
<hr/>	
Total	\$530,000

The production of soft candy upon a large scale would enable Mr. MacGregor to install mechanical cookers and stirrers, and machine belts to carry the centers to the dipping room and from there to the packing room. The dipping would have to be by hand, just as in the small factory, since high-grade chocolates could be made in no other way. The cold storage permitted candy to be stored indefinitely without depreciation of quality. The small plant could not afford cold-storage facilities, and accordingly inventories of finished candy could not be accumulated. In the large factory, candy could be made in the periods of dull business, thereby giving continuous employment to laborers, and it could be stored for periods of peak demand such as just before Christmas. A large undertaking could afford to advertise its products, while a small one could not.

The manufacture of hard candies required the use of machinery and an expensive plant. To make hard candy on a small scale was out of the question, both because of high cost, and because of the inability to purchase machinery which would produce strictly uniform sizes and shapes. Most manufacturers of hard candies began with a plant investment of from \$500,000 to \$1,000,000. A major objection, also, to undertaking the manufacture of hard candies was that the demand was highly seasonal; 60% of annual sales occurred immediately before Christmas.

Large candy manufacturers used great quantities of sugar, the price of which fluctuated widely. A speculative risk was incurred, which sometimes was disastrous. A company which had paid a high price for sugar might find, as the result of a drop in prices, that the value of the amount on hand was worth considerably less than the amount paid for it. The candy made with this expensive sugar would be at a disadvantage in the markets competing in price with candy made with the cheaper sugar. In 1920-1921, the drop in the price of sugar from 22.5 cents a pound in May, 1920, to 8.1 cents a pound in December, 1920, brought such severe losses to many companies that they were driven into financial difficulties. Small manufacturers of candies did not suffer so much from the fluctuations in the price of sugar, as they purchased only enough for a few weeks' operations.

Candy manufacturers whom Mr. MacGregor consulted told him that it was impracticable to start manufacturing candy on a large scale, and that if he decided to build a large plant he

would operate at a loss for several years. They said that many candy manufacturers already had expanded their plants with the result that a large amount of excess production capacity existed. A new factory, therefore, would have to meet severe competition in the manufacture of either kind of candy.

Mr. MacGregor, however, had confidence in his own ability and in that of the four other men who would invest \$20,000 each and take active part in the management of the company which he would form. He discussed the matter with a member of an investment banking firm, who was favorably impressed, and agreed to sell a bond issue of the proposed company, the MacGregor Chocolate Company, large enough to finance the erection of a plant. He was willing also, in case the plan was decided upon, to sell an issue of stock to finance additional requirements. The investment banker's willingness to do this financing arose out of his confidence in the ability of Mr. MacGregor.

Questions

1. What kind of candy should Mr. MacGregor manufacture?
2. Should he commence operations on a small or on a large scale?

CHAPTER IX

FINANCING THE PROMOTION¹

21. MATTAN YARN CORPORATION

Financing an Enterprise with Preferred and Common Stocks

In January, 1923, the owner asked Wallinson & Company, a firm of investment bankers, to finance the commercial development of his secret formula for preparing a fiber for use in the textile industry. The president of the banking house was favorably impressed with the description of the process and decided to conduct a thorough investigation to determine whether the company should undertake the necessary financing, and if so, on what terms. Accordingly, he devoted a period of eight months to an intensive study of the proposition, during which time he spent \$9,000 in fees to experts and investigators employed to verify the claims made by the owner of the formula. The investigation disclosed the following facts.

A plant called mattan, whose inner bark could be converted into a fiber to be used in the weaving of fabrics, grew in great quantities in Egypt, India, and China. The supply was easily accessible and was said to be practically inexhaustible; the plant reproduced the stripped bark within a period of 90 days. After being separated from the outer bark by soaking in water, the fiber was left saturated with gum. All efforts to devise a means of removing this gum without excessive expense had been unsuccessful until the discovery of the new formula, although eminent chemists had given the problem their attention.

Tests conducted on a commercial scale by the agents of Wallinson & Company showed conclusively that the new formula

¹ DEWING, pp. 3-111, 235-318; DUTTON, 131-160; GERSTENBERG, 111-133, 160-220, 373-452; JONES, 22-42; LINCOLN, 85-215; MARSHALL, 389-400, 404-410, 434-475.

accomplished cheaply all that had been claimed for it. After going through the process, the fiber came out soft and lustrous and entirely free from gum. It was from 11 to 18 inches in length, as compared with 4 to 5 inches for flax, and 1 to 1¼ inches for cotton. Its average strength, as compared with other fibers, was as follows:

	Percentage
Mattan	100
Hemp	36
Flax	35
Silk	13
Cotton	12

In the degumming process the fiber lost 15% in weight. This was not waste, however, for the wood pulp formed could probably be sold readily at approximately \$100 a ton to manufacturers of high-grade linen paper. After being degummed, the fiber absorbed moisture from the atmosphere until it was about 5% heavier than before the process.

Quantities of the fiber produced by this process under the supervision of Wallinson & Company's experts were given to various New England textile mills for experiment in weaving into cloth, both alone and mixed with silk, cotton, and wool. The results convinced Wallinson & Company's experts that the fiber, as treated by the new process, was a product of great commercial value. Although it cost less than cotton, it could be woven into a fabric comparable to coarser grades of linen. Mixed with silk, cotton, or wool, it added strength and luster to these fabrics and greatly reduced their cost. Further investigation showed that competition from other cheap fibers was not an important factor. Although experiments had been made, particularly in Germany, on the treatment of certain other cheap fibers to make them suitable for weaving, none yet had been produced in the United States which could compete in quality or in price with mattan fiber.

The owner of the formula proposed to organize a company, to be known as the Mattan Yarn Corporation, to engage in the importation and treatment of the fiber. He had secured options to purchase a plant in New England at \$100,000, and machinery at \$320,000. The plant was appraised at \$265,000. In addition

to this \$420,000, he estimated that \$75,000 would be needed for working capital. He was willing to assume the presidency of the company without pay for five years and to take 51% of the common stock in return for the formula and the \$250,000 which he claimed to have spent in its development.

It was estimated that the plant could produce 100,000 pounds of degummed fiber weekly. The production cost would be 22 cents a pound, including the cost of the material delivered, 12 cents, plus all the manufacturing expenses. The fiber could be sold to spinning mills at about 50 cents a pound. It was planned, however, to have the bulk of the product spun into yarn by various spinning mills on contract at a cost of 8 cents a pound. This yarn could be sold at 80 cents a pound. In addition, there was the profit to be obtained from the sale of the by-product at \$100 a ton. Orders from manufacturers, already received or promised, indicated capacity production within a few months, and it was expected that within a year the output would be sold for several years in advance. A contract had been arranged with a prominent importer to provide the fiber at a standard price in sufficient quantities to take care of any probable growth in the corporation. It was intended later to install spinning and weaving equipment to produce a staple cloth to be woven on contract for established textile mills. The fact was emphasized that the corporation did not intend to compete against established textile concerns but rather to assist them in bettering their product and making larger profits.

If Wallinson & Company decided to undertake the financing, it would sell either common stock or preferred stock with a bonus of common. Bonds or preferred stock alone were eliminated at the beginning. Both were fixed income securities not entitled to share in speculative profits and should not be offered to investors without a substantial record of past earnings. Since investors in this corporation undoubtedly were assuming a risk, they should be offered a security which would entitle them to a share in any extraordinary profits.

Since the owner of the formula was to receive 51% of the common stock, the equity behind this stock would be less than one-half of the amount paid in for it by investors, unless an arbitrary valuation was placed upon the formula whose worth was at yet untried in actual business. Although the estimated

earnings were large, the small equity behind the common stock might militate against a successful sale.

An issue of preferred stock, on the other hand, would have first claim on assets and therefore would have an equity of about 100%. With a common stock bonus in addition to his preferred stock, the investor would have a claim on any extraordinary profits that the corporation might make and, in the event of liquidation, he would have a fair chance of recovering his investment. The sale of preferred stock would put a claim on earnings ahead of the common and thus would delay the return to the men who had developed and financed the enterprise. The preferred dividends, however, would be so small in comparison with earnings, if the undertaking was successful, that they were not a serious factor. It was expected that the entire issue of preferred stock could be retired in a year, after which common stock would have first claim on earnings.

Questions

1. Should Wallinson & Company have financed this undertaking?
2. If they decided to finance, what securities should have been offered to secure the necessary funds?

22. SISCO WIRE COMPANY

Securing Funds by the Sale of Preferred Stock or of Bonds

The Sisco Wire Company was one of the largest manufacturers of electric wires and cables in the United States. The growth of the business of the company made it advisable to secure additional funds. The sum of one million dollars was desired, \$400,000 to be used to repay bank loans, and the balance to be added to working capital.² The additional sum could be secured by placing a mortgage on the property of the company and selling bonds secured by the mortgage, or by selling stock. Common stock was eliminated as a possibility, as the common stockholders did not wish to share their rights with the

² The working capital of a company is the portion used to finance current operations; that is, the capital not invested in fixed assets.

public. The choice lay, accordingly, between the sale of bonds and the issuance of more of the previously authorized preferred stock. The president of the company consulted an investment banking firm to secure advice as to whether the money should be raised by selling preferred stock, or bonds of the company.

The properties of the Sisco Wire Company comprised 57 acres of ground, and 814,000 square feet of floor space in several modern, fireproof buildings. The plants were located advantageously in regard to labor supply, transportation of raw materials, and markets. Approximately 2,000 people were employed under normal production. The yearly capacity of the plants was between \$20,000,000 and \$25,000,000 worth of finished products. The products comprised a varied line of copper wire and cables, bare and insulated, for electrical purposes.

The customers of the company included manufacturers of electrical apparatus, automobile companies, electrical goods wholesalers, public utilities, and mining companies. Sales were made throughout the United States by the salesmen of the company, who traveled from the central offices at Sisco and also from the branch offices at New York City, Chicago, Boston, Detroit, and Los Angeles. Sales volume during the two years prior to the time the new financing was contemplated, which years were relatively normal, had averaged \$13,278,500.

The capitalization³ of the company under each of the plans for securing the \$1,000,000 wanted is given in Exhibit 1. The fixed assets, less depreciation, were \$2,600,000. Current assets, after the proposed addition of the \$1,000,000, would be \$7,200,000, in comparison with \$650,000 current liabilities; the ratio of current assets to current liabilities, therefore, was more than 11 to 1.

The common stock of the company was held chiefly by the executives; it could not be bought on the market. Previous to 1920, funds had been secured from private sources, but so long as control could be maintained in the hands of the existing common stockholders, there was no reason for not going to the general investing public for capital. In 1920, an issue of \$4,-

³ By capitalization is meant the form of ownership of the company, that is, the amount represented by bonds, and the amount represented by stock or by different kinds of stocks.

EXHIBIT 1

CAPITALIZATION, SISCO WIRE COMPANY AFTER (A) SALE OF BONDS,
(B) SALE OF PREFERRED STOCK

Capitalization	A Sale of bonds	B Sale of preferred stock
Bonds		
Previously Sold.....	\$3,000,000	\$3,000,000
Proposed Issue.....	1,000,000	
Total Bonds.....	\$4,000,000	\$3,000,000
Capital Stock		
Preferred Stock.....	\$2,687,500	\$3,687,000
Common Stock.....	2,474,000	2,474,000
Total Stock.....	\$5,161,500	\$6,161,500
Total Capitalization.....	\$9,161,500	\$9,161,500

000,000 of preferred stock was authorized, of which \$2,687,500 had been sold publicly.

Additional financing had been undertaken the year previous to the consideration of securing the \$1,000,000, when the company borrowed \$3,000,000 on three-year, 6% gold notes. The earnings of the company up to that time indicated that the notes could be paid up, without selling other securities, in three years.

The average annual net earnings of the company, after taxes were paid, had been approximately \$588,500 during the eight years previous to 1924. From year to year, however, earnings had fluctuated widely from the average rate. Dividends of 7% had been paid upon the preferred stock each year since its issuance. Dividends on the common stock in the seven years prior to 1924 had averaged 8% in cash. A stock dividend of 300% had been paid common stockholders in 1920. In the first quarter of 1924, another stock dividend of 20% had been paid.

The records of sales and earnings showed the stability of the Sisco Wire Company; there was little doubt that the interest requirements on a \$1,000,000 bond issue could be paid regularly. The expense of borrowing by the sale of bonds would be less than by the sale of stock, as interest rates were low at the

time, and bonds were selling higher than stocks. This was a normal situation, because the interest paid on the bonds and the price at which they were to be paid at maturity were both fixed, and, consequently, the price which investors would pay for the bonds would vary inversely with the current money rates. Mortgage bonds bearing 6% coupons and maturing in 20 years could be sold at or near par value, while 7% dividends would have to be stipulated in order to sell preferred stock at par. This difference in expense on the \$1,000,000 would amount to \$10,000 annually.

There were essential differences between the relationship to the company of a bondholder and that of a stockholder. A bondholder would be a creditor of the company and would be entitled by contract to a regular payment of interest. The mortgage bond would be a long-time note secured by a lien on the property of the company. By agreement among themselves, the holders of bonds could foreclose⁴ upon the mortgage, thus taking the property, if the company failed to make interest payments on the bonds, or to pay the principal of the bonds at maturity. In addition to the regular payment of interest, it might be provided that a certain portion of the bonds be retired each year, or that a sinking fund be built up with which to retire the bonds at maturity. Sometimes it was specified that a company must maintain a definite proportion of working capital to bonds outstanding.

If preferred stock was to be issued, the purchasers would be part owners of the property, though under ordinary circumstances they would not have voting power. A share of stock would represent the ownership of an aliquot part of such assets of the company as might remain after all trade, bank, and mortgage creditors had been paid in full. Dividends on the preferred stock might be made cumulative and, in case they were not paid, the preferred stockholders might be given the right to assume control of the management of the company until they could be paid. Other restrictions might be placed upon the policies of

⁴ The means provided by the law for the enforcement of bondholders' rights is foreclosure, that is, a legal proceeding leading to the sale of the property to pay the debt. Foreclosure cases frequently are interrupted and converted into reorganizations, in which the bondholders might be given stock in exchange for their bonds.

the common stockholders in order to protect the preferred stockholders, but the legal means of enforcement would not be so drastic as those which could be used by the bondholders.

Stockholders shared in earnings only after all expenses had been paid. In this way the stockholders carried the risks involved in the operation of the company. If bonds were issued with which to raise the \$1,000,000 desired, it would be difficult to issue stock later because of the prior lien the bonds enjoyed upon the property. The agreement with the preferred stockholders, furthermore, provided that no lien could be placed on the property without the consent of the holders of two-thirds of the amount of preferred stock outstanding. It was suggested that it might be better to issue preferred stock up to the authorized amount; when the 6% notes were paid off in 1926, the company would be in a position to issue bonds. The rapid expansion of the company made it important to prepare the way for future financing.

The investment bankers favored the sale of preferred stock because of the adverse effect a mortgage would have upon the credit of the company. Earnings fluctuated widely, as the price of copper was relatively unstable. If a mortgage was placed on the properties, the interest payments on the bonds would rank ahead of payment of debts to commercial banks or to general creditors. In the event of financial difficulties, these unsecured creditors would be left at a disadvantage because of the prior lien of the bondholders upon the property.

Questions

1. Would you have recommended that the Sisco Wire Company secure the required funds by the sale of mortgage bonds or by the sale of preferred stock? Give detailed reasons.

23. RAYMOND RESTAURANT COMPANY

Determination of Working Capital for a New Restaurant

In January, 1923, the Raymond Restaurant Company planned to establish a self-service restaurant in a suburban center of a city where it had four similar lunch rooms. The restaurant was to be of the dairy lunch type with glass-top tables but

with more attractive fixtures than usually were found in such places. The new enterprise was to be established as a separate corporation with \$20,000 capital, which was all the money the company had available.

From their experience in other sections of the city the executives believed that approximately 9,000 people patronized restaurants in this suburban center. The company had obtained a 25-year lease on a building 40 by 80 feet, in a favorable location. Receipts were estimated at \$960 a day, based on a seating capacity of 180 and a turnover of thirteen times a day. If the company were forced to use waiters, a turnover of six times the seating capacity was all that could be obtained.

The fixture company, which had equipped the other lunch rooms of the Raymond Restaurant Company, estimated the entire cost at \$76,000 for decorating the building and furnishing all equipment necessary to put the restaurant in efficient operation. In these restaurants the company had paid the entire cost of fixtures and equipment out of profits within a year. Because of this record, the fixture company would equip the new restaurant on open account if the Raymond Restaurant Company would pay approximately \$28,000 upon installation of the fixtures. Since the new restaurant had only \$20,000 capital, it would be necessary to borrow \$8,000 to pay for the fixtures and equipment, and to borrow also a sufficient sum to provide working capital. The bank offered to loan the new restaurant as much as \$16,000 on its note on consideration of an average balance of 20%. Inasmuch as \$8,000 of the \$16,000 was needed for payment to the equipment company, only \$8,000 remained for working capital. It was necessary to determine, therefore, whether this amount was adequate.

Groceries constituted the largest supply item. They were purchased from wholesale grocers on terms of 1% 15 days, net 30 days. It was possible for the company to operate with only a week's supply of groceries on hand, but it believed that it could save from \$2,400 to \$3,200 a year if it carried a month's supply, because of the larger discount on quantity purchases. The company estimated that a month's supply of groceries necessary to obtain \$960 daily receipts would cost \$4,000, which was approximately 30% of the entire merchandise item. The remainder of the merchandise was in fresh meats, vegetables,

and bakery supplies. These had to be purchased daily on terms ranging from cash to net 10 days.

The company estimated its monthly expenses approximately as shown in Exhibit 1.

EXHIBIT 1

ESTIMATED MONTHLY EXPENSES OF THE RAYMOND RESTAURANT COMPANY

Rent	\$ 800	Payable in advance
Light and Fuel.....	480	Payable at the end of the month
Wages of Employees.....	3,200	Payable at the end of the week
Linen	320	Payable at the end of the week
Breakage	240	Payable at the end of the month
Miscellaneous	560	Payable at two weeks on the average

The company had to pay insurance, which amounted to \$1,600, in advance, at the time it opened its restaurant. Repairs would not be an important expense during the first five years of operation, but it was advisable to charge depreciation at the rate of 10% a year on fixtures and equipment.

The company had figures available on a competitive restaurant of the same type as the Raymond Restaurant Company's contemplated new restaurant. These are shown in Exhibit 2.

EXHIBIT 2

COMPETITIVE RESTAURANT FIGURES, 1923

Receipts per day.....	\$ 640	Bills and Accounts Payable..	\$ 7,100
Equipment	68,200	Wages and Rents Accrued.	2,100
Inventories	10,500	Reserve for Depreciation...	16,000
Notes and Accounts Receivable	200		
Cash	10,600		
Deferred Items	2,500		

The estimated receipts of the new restaurant were higher than those of the competitive restaurant in relation to equipment and inventories. The president believed that the better location and more attractive fixtures of the new restaurant would bring about this result. It was possible to determine the working capital necessary for the new restaurant in the manner shown in Exhibit 3.

EXHIBIT 3

RAYMOND RESTAURANT COMPANY, ESTIMATED WORKING CAPITAL TO OPEN
NEW RESTAURANT

Fresh Meats, Bakeries, and Vegetable Supplies.....	\$ 240
Rent	800
Insurance	1,600
Miscellaneous	240
Bank Balance on Loan.....	320
<hr/>	
Total	\$ 3,200

Additional Working Capital for 3 Days

Fresh Meats, Vegetables, and Bakery Supplies.....	\$ 720
Miscellaneous	80
<hr/>	
Total	\$ 800

Estimated receipts for 3 days\$ 2,880

Additional Capital to End of First Week

Fresh Meats, Vegetables, and Bakery Supplies.....	\$ 960
Wages	800
Linen	80
<hr/>	
Total	\$ 1,840

Estimated additional receipts to the end of the first week \$ 3,840

Total Requirements for First 15 Days

Groceries (less 1%)	\$ 3,960
Fresh Meats, Vegetables, and Bakery Supplies.....	3,600
Rent	800
Insurance	1,600
Wages	1,600
Linen	160
Miscellaneous	400
Bank Balance on Loan.....	320
<hr/>	

Total\$12,440

Estimated total receipts for 15 days.....\$14,400

Questions

1. Should the Raymond Restaurant Company have opened its new restaurant?
2. Was \$8,000 adequate working capital for the new enterprise?

24. CENTRAL LEATHER COMPANY

Industrial Reorganization

The Central Leather Company had incurred losses in 1920, 1921, 1923, and 1924. Since April 1, 1921, dividends upon the preferred shares of the company had been passed consistently; since they were cumulative, by June of 1926 the accrued dividends amounted to 36.75%. Steps already had been taken, with moderate success, toward the reorganization of the manufacturing activities of the company. Before dividends could be resumed and before the investment value of the shares of the company could be reestablished, however, it was desirable to adjust the deficit resulting from the losses incurred, and to change the status of the accumulated preferred dividend. For this purpose, a reorganization of the capital structure of the company was being contemplated.

The Central Leather Company was the largest concern of its kind in the industry. It had been incorporated in 1905 in the state of New Jersey. Subsequently it had expanded both vertically and horizontally, particularly by the purchase of related concerns. In 1926 its activities included the operation of the following: tanneries in ten eastern and central states; lumber mills in Pennsylvania and Wisconsin; extracting factories in North Carolina, Virginia, and Tennessee; timber lands in Pennsylvania, Wisconsin, Virginia, West Virginia, and Tennessee; glue works in Wisconsin and Pennsylvania; railroads; machine shops; and finishing plants. The operation of these units was for the most part in the hands of subsidiary corporations owned entirely or controlled by the Central Leather Company.

The balance sheet of the Central Leather Company as of June 30, 1926, is given in Exhibit 1.

EXHIBIT 1

CONSOLIDATED BALANCE SHEET, CENTRAL LEATHER COMPANY, JUNE 30, 1926 *

(000 omitted)

Assets

Property Account, Including Timber Lands, Railroads, Tannery Plants, and Plants Engaged in Lumber, Glue, and other Allied Industrial Operations.....	\$22,496
Investments	6,627
Sinking Fund Cash with Trustee.....	680

Inventories:

Leather in Stores, Lumber, and other Finished Products	\$10,496
Hides and Leather, Raw and in Process, Bark, Extract, and all other Materials.....	17,111
	<hr/> 27,607
Accounts Receivable	3,641
Bills Receivable	551
Liberty Bonds	24
Call Loans	6,050
Cash in Banks and on Hand.....	1,609
Deferred Charges to Profit and Loss.....	1,474
Deficit	19,647

Total	\$90,406
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Liabilities

20-year First Lien Sinking Fund 6% Bonds Maturing Jan. 1, 1945	\$13,868
7% Cumulative Preferred Stock	33,299
Common Stock	39,701
Accounts Payable	811
Interest Accrued on Bonds	416
Discount Accrued on Bonds.....	100
Reserves	2,211

Total	\$90,406
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* *The Commercial and Financial Chronicle*, Oct. 9, 1926.

CIRCUMSTANCES PRECEDING THE REORGANIZATION

Figures for sales, net profits, production, and debt indicate the trend of operations of the company prior to 1926. The statistics for these series will be presented.

Sales and Net Profits.—After 1919 the sales of the Central Leather Company declined until they were far below the pre-

war level. Net profits indicated that the smaller sales volume had not been accompanied by lower costs. The persistently unfavorable net profits beginning with 1920 suggested that pre-war levels might not be expected again soon. Sales and net profit figures for the years 1913-1925 are shown in Exhibit 2.

EXHIBIT 2

SALES AND NET PROFITS, CENTRAL LEATHER COMPANY,
1913-1925

(000,000 omitted)

Year	Sales	Net profits *
1913	\$ 59.6	\$ 4.4
1914	60.8	4.9
1915	68.9	6.6
1916	93.2	15.5
1917	91.7	14.4
1918	94.1	6.5
1919	118.9	14.3
1920	66.2	22.4 †
1921	43.2	11.1 †
1922	55.2	1.5
1923	52.8	7.3 †
1924	41.5	0.5 †
1925	41.1	1.5

* Including other income and after deducting interest on bonds.

† Loss.

Production.—In general, the leather industry had suffered severely with the depression of 1921. The Central Leather Company had endeavored to conduct its operations conservatively, and, with other companies, had been successful prior to its severe losses in 1920. When the company was unable to operate profitably in 1921 also, the officials of the company realized that the depression from the period of inflation was not temporary, and accordingly undertook a policy of adjustment. During the four subsequent years they sought definitely to liquidate their inventories. The volume of the inventory and its ratio to sales significantly reflected production policies; these figures, for the years 1913-1925, are given in Exhibit 3.

EXHIBIT 3

AMOUNT OF INVENTORY, AND RATIO OF INVENTORY
TO SALES, CENTRAL LEATHER COMPANY, 1913-1925

Year	Inventory (000,000 omitted)	Ratio of inventory to sales, percentage
1913	\$42.6	71.5
1914	42.6	70.1
1915	44.1	64.0
1916	56.4	60.5
1917	63.5	69.2
1918	63.4	67.4
1919	74.9	63.0
1920	60.6	91.5
1921	48.4	112.0
1922	48.0	86.9
1923	40.0	75.8
1924	33.0	79.5
1925	29.2	71.0

In their efforts at readjustment, the company also had disposed of production facilities, many of them at a loss, and had undertaken a general house-cleaning. The figures for current and fixed assets for the years 1913-1925, presented in Exhibit 4, indicate this process.

EXHIBIT 4

CURRENT ASSETS AND FIXED ASSETS, CENTRAL
LEATHER COMPANY, 1913-1925

(000,000 omitted)

Year	Current assets	Fixed assets
1913	\$57.5	\$63.5
1914	58.1	62.2
1915	61.1	60.2
1916	73.5	57.8
1917	83.9	61.5
1918	83.2	63.3
1919	98.3	48.6
1920	74.2	47.7
1921	63.9	46.8
1922	63.9	46.1
1923	51.3	43.3
1924	45.2	42.0
1925	40.4	32.3

Debt.—The current ratio, the amount of the funded debt, and the amount of the surplus account were indicative of the financial strength of the company. The statistics for these series for the years 1913–1925 are given in Exhibit 5.

EXHIBIT 5

CURRENT RATIO, FUNDED DEBT, AND SURPLUS
ACCOUNT, CENTRAL LEATHER COMPANY, 1913–1925

Year	Current ratio	Funded debt	Surplus
		(000,000 omitted)	
1913	12.5	\$35.8	\$ 6.4
1914	17.6	35.0	7.8
1915	26.6	34.4	10.5
1916	19.3	32.3	20.4
1917	9.3	31.7	28.9
1918	11.6	30.6	30.3
1919	10.2	29.0	30.5
1920	6.4	27.9	4.8
1921	5.0	26.3	6.9 *
1922	5.7	24.6	5.4 *
1923	8.6	22.4	12.6 *
1924	19.7	18.6	13.1 *
1925	19.2	14.6	19.1 *

* Deficit.

The reduction of the funded debt was the result of the adoption of a policy of applying for this purpose the proceeds from the sale of stumpage. In 1925, when this funded debt became due, almost \$15,000,000 of the issue remained unpaid. This amount was refunded by means of another mortgage.

THE REORGANIZATION

The immediate causes for the initiation of the plan of reorganization were: first, the fact that dividends upon the preferred shares had accumulated to the extent of 36.75%; and second, that the general post-war depression losses had totalled a net amount of \$38,300,000 by Dec. 31, 1925. The purpose of the reorganization was to fund the accumulated

dividend, so that the investment value of the shares of the company would be freed from the depressing effects of the accumulated dividends and the deficit. The investment bankers especially were interested in accomplishing this purpose. In brief, therefore, the object was the readjustment of the capital shares. The bases upon which it was hoped to attain this end were that normality of operations had been secured, that the company's cash position was strong, and that, with the exception of the delinquent dividends, dividend payments could be resumed.

The managers of the reorganization were Kuhn, Loeb & Company and the Bankers' Trust Company. On June 14, 1926, the following committees were appointed to work out a plan of reorganization:

Preferred Stockholders' Committee:

G. G. Dominick, of Dominick & Dominick
D. W. Dilworth, of E. F. Hutton & Company
C. S. Haight, Director of Central Leather Company
H. M. Lehmann, of Lehmann Brothers
Max J. H. Rossbach, Director of Central Leather Company
Frank Altschul, Lazard Frères

Common Stockholders' Committee:

A. J. Miller, of Hallgarten & Company
S. L. Fuller, of Kissel-Kinnicott & Company
H. R. Winthrop, of Winthrop & Company.

The plan submitted by the reorganization committee and which was being considered was, briefly, as follows:⁵ A new corporation was to be organized to take over the properties of the present Central Leather Company. The capitalization of the new company was to consist of: first, 7% cumulative prior preference stock in the amount of \$16,649,525; second, Class A participating and convertible stock without par value, 249,743 shares; and third, common stock, no par value, 397,010 shares. A description of the proposed shares follows:

1. Seven per cent Cumulative Prior Preference Stock.—Seven per cent dividend before any dividends paid on Class A stock or the common stock, if and as directors stipulate. Re-

⁵ For details see *Commercial and Financial Chronicle*, Oct. 9, 1926.

deemable at any time at 110 plus dividends. Preferred as to assets. Sinking fund to provide for the annual retirement of 5% of outstanding amount; payments to sinking fund to be made, if earnings are available, before payment of dividends on the Class A or common stock.

2. Class A Participating and Convertible Stock.—Non-cumulative, whether earned or not. Four dollars per share (no par value) before dividends paid upon common stock. After payment of accumulated prior preference dividends and the making of sinking fund payments, a \$2 participation provided for on a par with common stock. Convertible into common stock share for share. In case of liquidation, Class A shares will receive two-thirds of all amounts distributable after 100% is paid to the prior preference shares. Other indebtedness: as long as Class A is outstanding, no funded debt or prior securities shall be issued. Merging or consolidating with another company prohibited unless by approval of two-thirds of the outstanding Class A stock.

3. Common Stock.—Possesses usual characteristics of common shares. Dividend upon prior preference shares and \$4 of dividends on Class A shares and payments to the sinking fund come before common stock in the distribution of earnings.

The plan of reorganization as proposed by the committees included the following specifications regarding the voting privileges of the various shareholders: The first board of directors was to be named by the committees, two-thirds of the members by the preferred stockholders' committee, and one-third by the common stockholders' committee. Subsequent boards of directors were to be elected by stockholders, two-thirds by holders of prior preference stock and Class A stock voting together, and one-third by holders of common stock. After prior preference stock in the amount of \$10,000,000 had been retired, the holders of common stock were to be allowed to vote for directors share for share with the holders of prior preference and Class A shares. In all other cases of voting, all classes of stock were to have equal voting power. The prior preference, Class A, and common shares each were to be placed in voting trusts; these were to be for a period of 10 years or for such shorter period as the committees might determine.

The basis of the exchange of the preferred and common shares of the corporation for the new shares was to be as follows: for each share of preferred stock, \$5 in cash, \$50 par value (one-half share) 7% cumulative prior preference stock, and three-fourths of a share Class A participating and convertible stock; for each share of common stock, one share of common stock of the new corporation.

Questions

1. Discuss the advantages and disadvantages of the proposed reorganization to each of the following: (a) the preferred stock holders; (b) the common stockholders; (c) the Central Leather Company.

2. What other method, if any, might have been used to meet the situation resulting from the reduced profits?

PART III
BUSINESS FINANCE

CHAPTER X

ACCOUNTING¹

25. MATSON BUILDERS' SUPPLY COMPANY

Mechanism of Accounts

Prior to 1923 the Matson Builders' Supply Company made no attempt to maintain a continuous record of all its accounting transactions. Its records consisted only of a cash record, a file of unpaid customers' invoices, a similar file of unpaid creditors' bills, and a folder of past statements of assets and liabilities. In January of the year mentioned the company made arrangements with an accountant for the installation of a simple system of double entry records. The management wished to have a system of double entry bookkeeping which could be kept by an office girl who had other than bookkeeping duties and who was primarily the secretary to the manager of the company. The amount of bookkeeping to be done was not large, but the management felt the need for a more systematic form of bookkeeping than had previously been used. This need was evidenced in the inaccuracies and delays which characterized the former accounting, not to speak of the entire absence during the operating period of positive current information respecting certain important income and expense data.

In installing the desired system of double entry records, the accountant began with the statement of assets and liabilities as of Dec. 31, 1922, as a foundation. This statement was as follows:

¹ COLE, pp. 84-164; DUTTON, 181-219; LINCOLN, 286-363; MARSHALL, 475-488, 501-509.

STATEMENT OF ASSETS AND LIABILITIES AS OF DEC. 31, 1922

Assets		Liabilities	
Cash	\$ 937.28	Accounts Payable	\$17,809.26
Accounts Receivable	16,395.70	Capital Stock	35,000.00
Merchandise Inventory ..	17,432.50	Surplus	8,959.22
Building and Land.....	25,000.00		
Office Equipment	1,778.00		
Prepaid Insurance	225.00		
	<u>\$61,768.48</u>		<u>\$61,768.48</u>

The assets and liabilities of the above statement were transcribed into a ledger, with resulting accounts as shown below:

Dr.		Cash (Page 1)				Cr.	
1923 Jan. 1	From Statement	J1	\$ 937.28				

Dr.		Accounts Receivable (Page 3)				Cr.	
1923 Jan. 1	From Statement	J1	\$16,395.70				

Dr.		Merchandise Inventory (Page 5)				Cr.	
1923 Jan. 1	From Statement	J1	\$17,432.50				

Dr.		Buildings (Page 9)				Cr.	
1923 Jan. 1	From Statement	J1	\$17,000.00				

Dr.		Building Site (Page 10)						Cr.
1923 Jan. 1	From Statement	J1	\$ 8,000.00					

Dr.		Office Equipment (Page 11)						Cr.
1923 Jan. 1	From Statement	J1	\$1,778.00					

Dr.		Prepaid Insurance (Page 12)						Cr.
1923 Jan. 1	From Statement	J1	\$ 225.00					

Dr.		Accounts Payable (Page 15)						Cr.
				1923 Jan. 1	From Statement	J1	\$17,809.26	

Dr.		Capital Stock (Page 18)						Cr.
				1923 Jan. 1	From Statement	J1	\$35,000.00	

Dr.		Surplus (Page 19)						Cr.
				1923 Jan. 1	From Statement	J1	\$ 8,959.22	

As the first step in the recording process provided for by his system, however, the accountant had rewritten the statement as

of Dec. 31, 1922, in the form of an entry in a book called the journal:²

1923	Transaction	LF	Debit	Credit
Jan. 1	Cash.....	1	\$ 937.28	
	Accounts Receivable.....	3	16,395.70	
	Merchandise Inventory.....	5	17,432.50	
	Building.....	9	17,000.00	
	Building Site.....	10	8,000.00	
	Office Equipment.....	11	1,778.00	
	Prepaid Insurance.....	12	225.00	
	Accounts Payable.....	15		\$17,809.26
	Capital Stock.....	18		35,000.00
	Surplus.....	19		8,959.22
	To set up a double entry ledger, using the statement of assets and liabilities as of Dec. 31, 1922.			

² The journal, in contrast with the ledger, or book of final account, is known as the book of original entry. Further, its unit of record is the transaction, whereas that of the ledger is the account topic. The journal is essentially a form of two-column ruling, containing provision also for recording the date of the transaction and any underlying historical and documentary references. Its unit of record being the transaction, its record is essentially chronological and historical in character.

The journal, in its simplest form, is as follows:

Date	Transaction	LF*	Debit	Credit

* Ledger folio or page.

As in the case of the parallel-column account, the journal has a reference column. This column is used to record the page in the ledger to which the "journalization" of the transaction is transcribed, or "posted," with the reference column in the account giving the page in the journal. Thus the journal and ledger are "bound together" in a bookkeeping sense. Accounts may be referred to transactions (any one of which might affect several accounts), and transactions may be referred to accounts.

In the journal the debit and credit columns relate to the left and right sides of the account, in accordance with account terminology. At this point, however, we should make more complete note of the application of the term debit and credit to the various types of business transaction. We have so far called attention only to the use of debit and credit with respect to account balances, although any extension of their use which we might explain is more or less obvious.

With the beginning assets and liabilities thus recorded, the next step in the accountant's work was to make provision for

A moment's inspection of the ledger will show that in formal bookkeeping subtractions from one of the balance-sheet classes are placed in the same account category as additions to the opposing class. That is, debits, or left-hand items, mean additions to assets and subtractions from liabilities; and credits, or right-hand items, mean additions to liabilities and subtractions from assets. Hence debits must always equal credits. Asset balances and expense are debits and liability balances and sales or revenue are credits, and these two sets of data are equal.

With respect to illustrative types of transaction which may occur in the operation of a business, of which the first four are fundamental, this relation may be seen as follows:

1. One asset is exchanged for another, as where a customer pays an account, \$500.

Debit (+) Cash \$500 = Credit (—) Accounts Receivable \$500

2. One liability is exchanged for another, as where a Note Payable is given to an open account creditor, \$1,000.

Debit (—) Accounts Payable \$1,000 = Credit (+) Notes Payable \$1,000

3. Assets are increased with a corresponding and equal addition to liabilities as where merchandise is bought on account, \$2,000.

Debit (+) Merchandise \$2,000 = Credit (+) Accounts Payable \$2,000

4. Assets are decreased with a corresponding equal decrease in liabilities, as where a note payable is paid, \$1,500.

Debit (—) Notes Payable \$1,500 = Credit (—) \$1,500

5. Assets are increased with corresponding quantitative changes, as follows: (a) subtraction from assets and (b) increase in liabilities, as where sales at a profit are made during an accounting period, \$20,000, with Expenses \$16,000.

Debit (+) Cash and Accounts Receivable \$20,000 =

Credit (—) Assets \$16,000 and

Credit (+) Proprietor Liability

Account \$4,000

6. Liabilities are decreased with corresponding quantitative changes as follows: (a) decrease in assets and (b) increase in liabilities, as where an open account is settled partly by cash and partly by giving a promissory note or bill of exchange.

Debit (—) Accounts Payable \$5,000 = Credit (—) Cash \$2,500 and credit (+) Notes Payable \$2,500.

Thus each transaction, with its two equal opposing totals, always presents an equality of debits and credits. The sum of all transactions must therefore do the same. Of course, the important thing to note is that every transaction has two equal opposing totals with respect to its effect on the balance-sheet classes, no matter what those totals are termed in recording technique. And the equality of debits and credits is simply the convention¹

recording the transactions for the month of January. For the first two days of the period these transactions were as follows:

Jan. 2, Cash sales, \$1,650; credit sales, \$1,525; merchandise purchased on account, \$7,500; office supplies purchased, \$70.

Jan. 3, Merchandise sold on account, \$1,395; freight-out prepaid, \$25; received from customers on account, \$775.

As in the case of setting up the beginning asset and liability amounts, the first record made of these transactions was in the form of an entry in the journal. The entries which the accountant made were in the following form:

1923	LF	Debit	Credit
Jan. 2 Cash	2	\$1,650	
Sales	23		\$1,650
Cash sales			
2 Accounts Receivable *	3	\$1,525	
Sales	23		\$1,525
Sales on account			
2 Merchandise Purchases	22	\$7,500	
Accounts Payable *	15		\$7,500
Purchases on account			
2 Supplies Expense	27	\$70	
Cash	3		\$70
Supplies purchased for cash			
3 Accounts Receivable *	3	\$1,395	
Sales	23		\$1,395
Sales on account			
3 Freight-out	25	\$25	
Cash	1		\$25
Paid freight			
3 Cash	1	\$775	
Accounts Receivable	3		\$775
Received cash from customers			

* The accounts for individual customers and creditors are disregarded for our present purposes. Only financial totals are necessary. Underlying details for each total or summary would be recorded in a subsidiary ledger or other form of supporting supplementary record.

way of stating a relation with which bookkeeping as such has nothing to do; namely, additions to assets plus subtractions from liabilities equal additions to liabilities plus subtractions from assets. Double entry bookkeeping is named from the fact that the double aspect of every transaction is given formal expression in the accounting records, resulting in the continuous and complete preservation of the above relation. Single entry omits some transactions entirely and only half-records others during the periodic accounting.

Similar transactions for the remainder of January, in summary form, are listed below:

Sales on credit	\$23,500.00
Returned sales	275.00
Cash sales	9,700.00
Purchases on Account	19,625.00
Cash Purchases	5,300.00
Collections	6,000.00
Payments to Creditors	4,500.00
Wages and Salaries Paid.....	622.50
Selling Expenses	750.00
Sundry Expenses	95.30

The transactions represented by the foregoing summaries were journalized with debits and credits resulting as follows:³

Debit Accounts Receivable	\$23,500.00	
Credit Sales		\$23,500.00
Debit Returned Sales	275.00	
Credit Accounts Receivable.....		275.00
Debit Cash	9,700.00	
Credit Sales		9,700.00
Debit Merchandise Purchases.....	19,625.00	
Credit Accounts Payable.....		19,625.00
Debit Merchandise Purchases.....	5,300.00	
Credit Cash		5,300.00
Debit Cash	6,000.00	
Credit Accounts Payable.....		6,000.00
Debit Accounts Payable.....	4,500.00	
Credit Cash		4,500.00
Debit Wages and Salaries Expense.....	622.50	
Credit Cash		622.50
Debit Selling Expenses.....	750.00	
Credit Cash		750.00
Debit Sundry Expenses.....	95.30	
Credit Cash		95.30

Still further entries were made at the close of business Jan. 31 as follows:

Jan. 31	Debit Wages and Salaries Expense.....\$	65.30	
	Credit Wages Accrued Liability.....		\$ 65.30
	To record wages accrued but not paid.		

³ These journalizations, being summaries, are undated.

Jan. 31	Debit Depreciation Expense.....\$	50.00	
	Credit Buildings		\$ 30.00
	Credit Equipment.....		20.00
	To record depreciation charges for January.		
31	Debit Insurance Expense.....	75.00	
	Credit Prepaid Insurance.....		75.00
	To record insurance expired.		
31	Debit Cost of Goods Sold.....	17,432.50	
	Credit Merchandise Inventory January 1		17,432.50
	To charge January with goods brought over from December.		
31	Debit Cost of Goods Sold.....	32,425.00	
	Credit Purchases		32,425.00
	To charge January with goods purchased in January.		
31	Debit Merchandise Inventory February 1	16,500.00	
	Credit Cost of Goods Sold.....		16,500.00
	To give January credit for goods left for February.		
31	Debit Sales	275.00	
	Credit Returned Sales		275.00
	To deduct returned goods from sales.		
31	Debit Sales	37,495.00	
	Credit Profit and Loss.....		37,495.00
	Revenue for January.		
31	Debit Profit and Loss.....	35,110.60	
	Credit Cost of Goods Sold.....		33,357.50
	Supplies Expense		70.00
	Sundries Expense		95.30
	Selling Expense		750.00
	Freight-out Expense		25.00
	Wages and Salaries Expense.....		687.80
	Depreciation Expense		50.00
	Insurance Expense		75.00
	To deduct January expenses from revenue to determine net profit.		
31	Debit Profit and Loss.....	2,384.40	
	Credit Surplus		2,384.40
	To carry net profits for January to a proprietorship account.		

With the required entries for January thus journalized and posted, the effect on the ledger accounts was as follows:

Dr.		Cash		Cr.	
1923			1923		
Jan. 1	From Statement	\$ 937.28	Jan. 2	Supplies	\$ 70.00
2	Sales	1,650.00	3	Freight-Out	25.00
3	Accounts Receivable	775.00	✓	Purchases	5,300.00
✓	Sales	9,700.00	✓	Accounts Payable	4,500.00
✓	Accounts Receivable	6,000.00	✓	Wages and Salaries	622.50
			✓	Selling Expense	750.00
			✓	Sundry Expense	95.30

Dr.		Accounts Receivable		Cr.	
1923			1923		
Jan. 1	From Statement	\$16,395.70	Jan. 3	Cash	\$ 775.00
2	Sales	1,525.00	✓	Cash	6,000.00
3	Sales	1,395.00	✓	Returns	275.00
✓	Sales	23,500.00			

Dr.		Merchandise Inventory		Cr.	
1923			1923		
Jan. 1	From Statement	\$17,432.50	Jan. 31	Cost of Goods Sold	\$17,432.50
		\$17,432.50			\$17,432.50
Feb. 1	Inventory (from "Cost of Goods Sold")	\$16,500.00			

Dr.		Building		Cr.	
1923			1923		
Jan. 1	From Statement	\$17,000.00	Jan. 31	Depreciation	\$ 30.00

Dr.		Building Site		Cr.	
1923					
Jan. 1	From Statement	\$ 8,000.00			

Dr.		Office Equipment		Cr.	
1923			1923		
Jan. 1	From Statement	\$ 1,778.00	Jan. 31	Depreciation	\$ 20.00

Dr.		Prepaid Insurance		Cr.	
1923			1923		
Jan. 1	From Statement	\$ 225.00	Jan. 31	Expense	\$ 75.00

Dr.		Accounts Payable		Cr.	
1923			1923		
✓	Cash	\$ 4,500.00	Jan. 1	From Statement	\$17,809.26
			2	Purchases	7,500.00
			✓	Purchases	19,625.00

Dr.		Accrued Wages				Cr.
				1923 Jan. 31	Wage Expense	\$ 65.30

Dr.		Capital Stock				Cr.
				1923 Jan. 1	From Statement	\$35,000.00

Dr.		Surplus				Cr.
				1923 Jan. 1	From Statement	\$ 8,959.22
				31	From Profit and Loss January	2,384.40

Dr.		Purchases				Cr.
1923 Jan. 1	Accounts Payable	\$ 7,500.00	1923 Jan. 31	Cost of Goods Sold		\$32,425.00
	Accounts Payable	19,625.00				
	Cash	5,300.00				
		\$32,425.00				\$32,425.00

Dr.		Supplies Expense				Cr.
1923 Jan. 1	Cash	\$ 70.00	1923 Jan. 31	To Profit and Loss		\$ 70.00

Dr.		Sundry Expenses				Cr.
1923 ✓	Cash	\$ 95.30	1923 Jan. 31	To Profit and Loss		\$ 95.30

Dr.		Selling Expenses				Cr.
1923	Cash	\$ 750.00	1923 Jan. 31	To Profit and Loss		\$ 750.00

Dr.		Freight-Out				Cr.
1923 Jan. 2	Cash	\$ 25.00	1923 Jan. 31	To Profit and Loss	\$ 25.00	

Dr.		Wages and Salaries				Cr.
1923 Jan. 31	Cash Accrued Liabilities	\$ 622.50 65.30	1923 Jan. 31	To Profit and Loss	\$ 687.80	

Dr.		Returned Sales				Cr.
1923 Jan. 31	Accounts Receivable	\$ 275.00	1923 Jan. 31	Sales	\$ 275.00	

Dr.		Depreciation Expense				Cr.
1923 Jan. 31	Buildings and Equip- ment	\$ 50.00	1923 Jan. 31	To Profit and Loss	\$ 50.00	

Dr.		Insurance Expense				Cr.
1923 Jan. 31	Prepaid Insurance	\$ 75.00	1923 Jan. 31	To Profit and Loss	\$ 75.00	

Dr.		Cost of Goods Sold				Cr.
1923 Jan. 31	Inventory, Jan. 1 Purchases	\$17,432.50 32,425.00	1923 Jan. 31	Inventory * To Profit and Loss	\$16,500.00 33,357.50	

* Inventory as of "close of business" January 31 or as of "opening of business" February 1.

Dr.		Sales		Cr.
1923 Jan. 31	Returns To Profit and Loss	\$ 275.00 37,495.00	1923 Jan. 1 2 3 ✓ ✓	Cash Accounts Receivable Accounts Receivable Accounts Receivable Cash
				\$ 1,650.00 1,525.00 1,395.00 23,500.00 9,700.00

Dr.		Profit and Loss *		Cr.
1923 Jan. 31	Cost of Goods Sold and Expenses To Surplus	\$35,110.60 2,384.40	1923 Jan. 31	Sales
				\$37,495.00

* The profit and loss account of this problem illustrates how double entry bookkeeping gets the ledger back to the balance sheet accounts. That is, the process of "closing the ledger" consists in "clearing out" the expense account and revenue account balances into accounts set up for recording the computation of net profit or net loss. The accountant calls all forms of temporary statistical accounts like those of sales, expense, and profit and loss "nominal" accounts, as distinguished from balance-sheet accounts, which he terms "real" accounts. Thus the accounts in the ledger reflect in technical form the steps in the computation of the results of business operation as seen in the ordinary profit and loss statement. And the closing process formally ends the accounting cycle—a month or a year or whatever period chosen—which began with the ledger containing only "balances" of assets and liabilities, which developed in the meantime certain casual accounts explanatory of important operating changes in the asset content of the business, and which "closed" with only "balances" of assets and liabilities. Nominal accounts, so-called, exist only for the statistical interval between two successive balance sheets; having given up their information, they are absorbed into the balance-sheet account, which reflects the net result of the changes which they represent. In the present problem that balance-sheet account is "surplus."

We may thus see that the profit and loss statement is simply a statement of the casual aspects of those changes in assets which result in profit or loss. Hence, at bottom, it is simply a statistical segregation of balance-sheet changes—changes which are going on constantly in the assets and proprietary equities of a business. That is, as sales are made, new assets in the form of cash or receivables flow into the business. At the same time, asset values flow out in the form of expenses or cost of maintaining an establishment and of producing sales, in the form of cash paid for labor services, merchandise sold, insurance expired, depreciation of "fixed" assets, and so on. Ledger accounts merely supply formal and permanent technical recording "niches" for the informational topics of the balance sheet and profit and loss statement.

Questions

1. Describe briefly the nature and use of the following:

Statement of Assets and Liabilities

Ledger

Journal.

2. Figure the balances, if any, in each of the ledger accounts on pages 151 to 154, remembering which are debit and which are

credit. Add the debits and compare the total with the sum of the credits. This is called a trial balance.

26. DESMOND OIL COMPANY

Direct and Indirect Costs

Alphonzo Desmond had extensive cocoanut oil holdings in the Philippine Islands. His properties included plantations of cocoanut trees; a factory for drying the copra and for squeezing out, or, as it is termed in the vegetable-oil trade, "expressing" the oil; and a small refinery. Several large users of vegetable oils, among which were three American soap manufacturers, were attracted by the enterprise and bought out these holdings. The administration of the undertaking required a more adequate knowledge of costs than had existed.

The principal product Mr. Desmond had sold had been copra, or the dried "meat" of the cocoanut. The vegetable-oil and soap interests in the United States which had been securing some of their raw materials from Mr. Desmond, saw an opportunity to develop the business of making oil at the source, thus saving the cost of transporting the bulky copra to oil-extracting plants in the United States. The copra cake, or the solid residue after the oil had been expressed, had a ready sale for cattle feed in China. It was for the purpose of developing this business that the group of oil consumers in the United States had bought the Philippine properties of Mr. Desmond and had organized the Desmond Oil Company.

The organizers of the company believed it important to secure detailed information as to the costs of producing copra and the several grades of cocoanut oil. For that purpose, they planned to install an accounting system which would provide current reports on total costs of each type of product, and which also would show the nature of the several elements of cost. This information, it was expected, would be essential in fixing selling prices and in deciding whether production should be increased or decreased.

The first step in devising the accounting system was to decide which elements of cost were directly assignable to the various phases of production, and which elements were indirect, or incurred for the benefit either of a series of operations, or

of the production organization as a whole. In general, the problem was to decide what expenses were directly caused by production needs, and therefore varied in proportion to the volume of output, and what expenses were more or less indirect, so that they did not vary with changes in the rate of production.

In rough outline the work at the plantation was as follows: The cocoanuts were gathered from the trees by natives who worked in groups, collecting the cocoanuts in bags which they carried to the drying station on their backs. Each plantation had its own drying station. The men were paid on the basis of the number of nuts they brought.

The cocoanuts were cracked open by hand; the "milk" thrown away, or drunk by the natives; and the "meat" laid out on planks in the sun. From time to time the meat was turned by hand, until it became browned all over. This was called "sun dried copra" and made the best and whitest oil. It took several days to carry out this process, the length of time varying on the different plantations according to their location: those on the islands where there was most direct sunlight and the minimum of clouding required about half the time that was required on the more poorly situated plantations. This labor was paid for by the day or the hour.

If it was desired to speed up the process, the cocoanuts, instead of being broken at the plantations, were shipped in the small interisland vessels to the main factory at Iloilo, where they were broken in the same way as at the plantations, except that the meat was put into kilns in which it could be dried in less than 24 hours. The husks were used for fuel in the kilns. All native work about the factory was paid for on a time basis.

The sun-dried or kiln-dried copra then was collected at the factory in large storage sheds, from which it was removed as wanted and sent to the pressers. There were four harvest seasons, two large ones and between these, two lesser ones. The attempt was to collect enough copra during one of the main harvests to last, when supplemented with the copra from the ensuing short season, for six months, that is, until the next big harvest.

For the production of cocoanut oil, the copra was put into burlap bags, or "sacks," as they are called. This sack was placed in the cylinder of the presser which was heated by steam during the pressing. The sack was taken out of the presser

after the first pressing, shaken up, and pressed again. Then it was removed, opened, and the solid mass inside broken up again. It was pressed a third time in a presser which shaped the solid mass into a symmetrical shape for sale.

Each successive pressing gave a poorer oil, which, as a rule, was not combined with the oil from the previous pressing, although when the oil was not going to be used in a place where whiteness counted, the second pressing could be combined with the first. The oil from the third pressing was of a quality inferior to the previous pressings.

At the Desmond factory these three grades of oil were collected separately in tanks in which, in the hot Philippine climate, they remained in the oil state and were pumped, as required, into tank ships, or were run off into five-gallon tin cans.

Questions

1. Which of the following costs were indirect and which were direct?

- a. Labor of collecting nuts.
- b. Labor tending the drying of the copra.
- c. Rent on areas of land required for sun drying.
- d. Transportation costs taking the nuts or the sun dried copra between the islands to Iloilo.
- e. Loss of weight of the copra during storage at the factory.
- f. Fuel for steam for operating and heating the presses.

27. EMMONS TAXICAB COMPANY

Utilization of Cost Records

The Emmons Taxicab Company operated a fleet of 75 taxicabs of uniform model and design, in a large eastern city. The company had been in operation a year and a half when the success which had attended the undertaking caused the management to determine upon a policy of rapid expansion. One hundred seventy-five new cabs were ordered, to be delivered at intervals and to be paid for with funds received from the sale of stock. It was expected that continuous growth of the business would justify the periodical placement of still further orders. Up to

the time when this decision was made, no detailed records had been kept of the costs of operation of individual cars. With the expected growth, however, the advisability of keeping records of the cost of operation of each car was considered by the management.

The comparatively small number of cars previously in service had not made necessary the keeping of detailed records, since all the cars had been purchased at the same time and had been operated uniformly. All the costs of operation had been grouped together and divided by the total number of miles operated to ascertain the average cost per car-mile. Detailed records had not been necessary for purposes of control, since the manager with comparative ease had been able to keep in touch with the operating condition and efficiency of each car by means of personal observation and with the aid of certain records, such as mileage; gasoline and oil consumed; and repairs. These records were kept for each car, but were not used, except in totality, for the determination of costs of operation.

The expected receipt of successive lots of new cars, however, and the consequent expansion of the business made advisable the keeping of detailed records in order to have adequate control. It was essential, for instance, that no car should be operated beyond the profit-making point, that is, the point at which the increasing costs of maintenance began to cut into the margin of profit which the car was expected to earn on the basis of normal operating mileage. After that point was reached, it was economical to sell the car and purchase a new one, out of the fund which the company had accumulated by setting aside a reserve for depreciation. Only complete detailed records of unit costs kept for each car could show definitely when this point was reached for an individual car. The fact that many of the old cars were probably approaching this point as a result of rapid depreciation brought this need home to the management. A further object was to secure more effective operating control, in order that each car might be kept in use up to its maximum operating capacity.

Despite the increased clerical force and the expense which were necessary, the management decided to institute a system by which the costs of operating each car could be ascertained from month to month. They were satisfied that the advantages

and savings which would be obtained through such a system would more than compensate for the increased expense.

Under the new system an account was kept with each car, to which were charged the direct costs of operation and maintenance, and a share of the indirect costs which could not be charged to individual cars in the first instance and had to be distributed over all on appropriate bases. The total expense attributable to a given car, accumulated for a month and divided by the number of miles which the car had run during the month, gave the cost of operation per mile. To the car account was credited the revenue which was received from its operation and the difference between the debits and credits represented the net profit which the car had earned. This was reduced to a per-mile basis by dividing by the number of miles operated.

This method involved the treatment of the cars as productive units to which were charged all the costs of operation, both direct and indirect. In a sense this was comparable to the setting up of individual machines in a factory department as production centers, to which were charged all expenses that could be directly allocated and a share of those which had to be distributed on some equitable basis.

There was one marked difference, however, from the regular procedure in a factory in such cases. Usually when machines were set up as production centers, standard rates known as machine rates were calculated and used in crediting the individual machine accounts and charging to jobs which used the machines. In other words, standard rather than actual figures were used in determining the costs of the jobs. In the case of the Emmons Taxicab Company, however, only actual performance was recorded.

If rates comparable to machine rates were to be set up by this company, the procedure would be as follows:

A so-called machine rate for each car, or possibly a group of cars of the same type and age, would be calculated by dividing the total expenses attributable to that car or group for a normal operating period by the normal number of operating miles during that period. This would give a standard rate per mile which could be used until conditions changed sufficiently to justify the change of the rate. Two accounts would be kept for each car. To the first would be debited all the actual expenses attributable

*In production
standard
than direct*

to the car. To the second would be credited the actual revenue received from the operation of the car. Transfers between these accounts would be made through the use of the standard machine rates. The first account would be credited, and the second debited, with an amount obtained by multiplying the actual number of miles operated by the standard rate per mile. The balance in the second account would represent normal operating profit for the number of miles actually operated, and the balance, if any, in the first account would represent losses resulting from operation for less than the normal number of miles, or gains resulting from operation for more than the normal number, or losses or gains from inefficiency or exceptional efficiency in the control of expense items. These over or under absorbed balances would be transferred directly to profit and loss, which would show finally the same result as if only actual figures had been used.

The principal advantage of this method would be the separation of losses or gains arising from variations in operating mileage, from gains or losses resulting from the regular activities of the business. Some of the expenses, such as overhead of garage and office, taxes, insurance, part of depreciation, and the straight salaries of drivers, would not vary with mileage operated. Consequently, with the use of actual costs alone, the cost per mile would rise as the number of miles operated declined, and *vice versa*, as the result merely of the variation of the mileage. The variations in cost, therefore, would be likely to mislead if the variations in mileage were overlooked. With the use of standard rates, the losses or gains which resulted from changes in mileage would be shown separately, although the final figure of net profit or loss would be the same in each case.

The management had considered the use of standard rates such as those just outlined, but was convinced that the facts were shown by the determination of the actual costs per mile each month. If costs increased in any month as the result, partially or entirely, of a decline in mileage operated, this cause would be recognized without an exact analysis of the increase. The executives argued that costs per unit actually did increase when mileage declined, and it was their desire that the accounts should reflect this fact.

Questions

1. Should the company have kept records of the cost of operation of each car?
2. Was it necessary to establish standard rates in order to secure the control desired?
3. In what other ways could the management secure the information and control it wanted?

28. HASKELL ELECTRIC PRODUCTS COMPANY

Accounting for Depreciation

The Haskell Electric Products Company was a leading manufacturer of electrical apparatus and equipment. A large variety of complex machines was used in the factory of the company, machines which, as time elapsed, gradually wore out. It was necessary to determine in what way the depreciation of the machines should be charged, so that the products each year would bear their share of the cost of the machines.

When a new machine was purchased, its cost was entered on the company's books of account, and thus appeared as an asset. The machine wore out with use, rapidly or slowly, according to the type of machine and the purpose to which it was put. Repairs were made, but they could not maintain the machine at its full original value. Repair charges were considered a part of the operating expenses of the company. Since, despite the repairs, there was a continual decrease in the value of a machine, the company knew that eventually it would have to replace the machine with a new one. The company desired, therefore, to charge to each year's operations an amount which represented the decrease in the value of the machine, and at the same time to set aside each year a sum of money for use in replacing that machine when it had completely depreciated, that is, had outgrown its use.

The building up of the replacement fund required that an estimate be made of the number of years each machine would be usable. The money set aside each year to make up the fund was charged as an expense, similar to the expense of repairs. The annual amount of depreciation was subtracted from the book value of a machine each year, and a corresponding amount

was set aside, among the company's assets, as a "machinery depreciation fund." This fund was to be used solely for the replacement of worn-out machinery.⁴ In determining the rate of depreciation on a machine, the company customarily took account of the fact that even a worn-out machine had some market value; often this was the scrap value of the metal.

The number of machines in a department ranged from approximately 100 to 1,300. They were not standardized throughout the factory and were not purchased at a uniform date. The number increased as the plant was enlarged; each machine represented the best development at the time of its purchase. Machines performing similar operations to a certain extent were grouped together in "contributing" departments, examples of which were the punch press and automatic screw-machine departments.

The company officials considered the adoption of one of three policies with regard to the depreciation of its machinery: (1) a policy of "straight line," or fixed percentage of first cost, depreciation for all the machinery in the plant; (2) a policy of fixed percentage of remainder value, or "curved line" depreciation; or (3) either one of these for separate departments. The percentage of first-cost depreciation method eventually would wipe out the book value entirely. Its accuracy depended upon the calculation of the life of the machinery. If its life were over- or under-estimated, the books would show an incorrect value, but the error in the latter case was justified by conservatism. It was doubtful, however, whether the straight-line method gave a true statement of the depreciated value during the life of the machinery. For numerous machines, the actual depreciation was greater in the earlier years than in the later. The curved-line or percentage-of-remainder method of depreciation more accurately covered the valuation during a machine's

⁴ Sometimes before a machine was worn out, and therefore before it had been fully depreciated in the accounts, an improved type of machine was introduced. When the new type was much more effective or less costly to operate, the company found it advantageous to replace the former machine by one of the newer type. In such a case, the older machine was said to have become obsolete, though still usable. To care for such obsolescence of machinery, special expense charges sometimes had to be made over and above repair and depreciation charges.

life. A remainder-value figure, however, always would appear on the books until the machinery actually was scrapped.

At the time this problem was considered, the Haskell Electric Products Company had just purchased three new machines. Machine A cost \$1,500. It was expected to be usable for 10 years; at the end of that time its scrap value probably would be about \$200. Machine B, costing \$800, was of a different type from any previously used by the company. The manufacturer of that machine claimed that it would be fully useful, provided current repairs were made, for 20 years. The officials of the company, however, believed that 12 to 15 years was a more reasonable estimate. Fifty dollars was a fair scrap value for this machine. Machine C, costing \$200, normally would be worn out in eight years, having then a scrap value of perhaps \$25. It was known, however, that another manufacturer was developing a superior type of machine to perform the work done by Machine C. The improved type might be put on the market within the next two years.

Questions

1. Construct annual depreciation schedules for Machines A and B, according to (a) "straight-line" depreciation, (b) "curved-line" depreciation.
2. Construct a plan for caring for both depreciation and obsolescence on Machine C.
3. Assuming that prices are influenced largely by costs, should depreciation be treated as an expense?
4. How does obsolescence differ from depreciation?

29. EASTERLY ASSOCIATION

Prevention of Price-cutting by Adoption of Uniform Cost-accounting System

The objects of the Easterly Association, which was formed in 1910 by progressive manufacturers of a food product, were to promote harmonious relations among manufacturers of that product, and to increase the good will of the public toward the industry. No attempt was made to collect and disseminate among the members statistical data which in any way might

tend to limit competition, to fix prices, or to harm the interests of the public. The chief activity of the organization was the arbitration of disputes among its members.

Entry into the industry did not require much capital. Methods of manufacture were not standardized, and companies usually set their prices to meet competition regardless of cost. The accounting systems used frequently were so inaccurate that the manufacturers had no real estimates of actual costs. It became evident to the Easterly Association in 1919 that such unintelligent competition was injuring the industry and that the public would benefit ultimately if such competition were controlled. Since sales of products at less than cost led to ultimate bankruptcy, capital was wasted. The manager of the association, therefore, considered the advisability of attempting to create a standard cost-accounting system.

Trade associations generally had been the means of installing uniform cost-accounting systems in other industries throughout the United States. A few years before, an attempt had been made in the West to establish a system for the same industry in which the Easterly Association was interested, but the plan was only tentative, and was in the process of revision.

The chief advantage of a uniform cost-accounting system was that the more scientifically operated manufacturing companies were protected from those who unknowingly sold below the cost of production. There was opportunity, also, for improvement in conditions of competition among the former.

If the association outlined a uniform plan of accounting and merely explained its use, no charge could be brought of an attempt to limit competition or to fix prices, but if it performed the actual work for a member, suggested percentages to be attained, or otherwise dictated to the membership, it was open to an investigation by the Federal Trade Commission.⁵

⁵ "The purpose of this discussion is to show that the service of statistical information as to production costs, volume of production, stocks, sales, and selling prices is a useful and proper activity for a trade association. It is clear that each of these elements of trade information, or all of them combined, can be collected and distributed in a lawful manner and for a lawful purpose. Each and all of them are equally capable of misuse for unlawful purposes. Experience shows that both methods of treatment have been employed. The character of the service, its intent, and the use to which it is put depends upon the spirit of the members of the association

For illustrative purposes, a full set of accounts had to be made out. This might be interpreted by public officials as an attempt to fix costs. Although fictitious figures were used throughout, it might be held that ratios of cost to selling price could be deducted from them and applied to members' accounts. All material, however, was to be designated as strictly illustrative.

It was necessary to induce the majority of the manufacturers in the trade to accept the system. Those who had their accounting methods established on another basis might not be willing to change and thereby destroy the value of collected statistics. Although small manufacturers benefited more than others by adopting a uniform system of accounting, it was difficult to convince them of its advantages. There might be a reaction, furthermore, against the association, when unintelligent competition failed to stop as soon as the plan had been installed.

In other associations, after uniform systems had been

projected through the agency which they create. The level of association action will be what its members determine. An effort has been made here to explain the principles underlying the law and the judicial decisions, the reasons for the opposition of the law and the attitude of the administrative agents of the law to certain tendencies, to movements in this or that direction, for a clearer understanding on the part of association members. The present state of the law and the principles which it expresses may or may not meet universal approval. None the less, what trade associations have now to meet is the law as it is, and the tests of conduct are those which the law now establishes.

"The trade association is not a combination in restraint of trade with one hand tied. It is not a medium for the exchange of business secrets for the sole benefit of those who join in the exchange. It is not a new arrangement for the accomplishment of any object which needs, because of the law, to be pursued stealthily and in the dark. It is an expression of an interest common to all in any industry in which it arises, seeking to benefit the individual by bettering the entire industry and the public which the industry serves. It serves where the individual acts. It instructs where the individual learns. It works for the individual but never instead of him. And while the attention of the individual may be focused on himself and his own interest, the aims, objects, and ideals of the trade association are fixed in the wider field of the welfare of the whole group, the whole industry, and the whole public dependent upon it.

"The trade association must 'hitch its wagon to a star.'"—GASKILL, NELSON B., of the Federal Trade Commission, in *Trade Association Activities*, 1923, U. S. Department of Commerce, p. 43.

adopted, statistical activities often had increased until they had become illegal, because they furnished a basis for fixing prices or curtailing production. The manager was confident, however, that he could control the plan and that it could be constructed so that it would not be used illegally. He decided to adopt the revised, uniform accounting plan of the western association of his industry. The plan was published in book form with figures which were stated clearly to be illustrative.

Questions

1. What are the advantages to manufacturers of a particular product of having a uniform way of keeping their accounts?
2. If price-cutting enables consumers to secure articles at a lower cost than otherwise they would be able to do, what is there objectionable in the practice?

CHAPTER XI

*Financial Management*¹

30. SARGENT MANUFACTURING COMPANY

Budgetary Control of Production

The Sargent Manufacturing Company, which produced pipes, fittings, and small tools, originally had no system for the control of stores. Because of the lack of an adequate check, stores had been ordered haphazardly, and while frequently some orders were delayed through lack of parts, for other parts the supplies were sufficient to last several years. Several years prior to 1922, therefore, the company had installed a stores-record system. In 1922 some members of the management were in doubt as to whether the company should continue the existing method of estimating future production as a basis for determining the proper quantities of its various products to be kept in stock.

The procedure already in operation used the sales of each product for the previous four years as the basis for arriving at the quantity to be manufactured in the following year. The record sheet for tabulating these figures had ten columns: four for the sales, by products and sizes, of the four preceding years; four for the percentages which the various itemized sales in each year bore to total sales for the year; one for averages based on sales for the four years; and one for the percentage distribution of the items in the average column. Sales figures were in terms of quantities. The sheet for the year 1922 had the following headings:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
								Average	
1918	%	1919	%	1920	%	1921	%	Quantity	%

¹ DUTTON, pp. 161-180, 304-319.

From the figures in column 9 a balance-of-stores quantities form was made out. The average quantities were entered on this form, and a margin of safety was set up to allow for any unusual demand for a product. For example, if the average quantity for a tool of a certain size was 1,200 per year, the average to be produced in one month would be 100; it might not be sufficient, however, to have only 100 made up each month with no reserve stock to cover unusual demands, and a margin of safety of 50 might be established. In that case, 150 would be made the first month and 100 each month thereafter, in order that 50 might usually be on hand as a reserve. The reserve stock in any case was set at not more than 100% of the average quantity for a production period. For the greater part of the items with large sales, the reserves amounted to 25% of the average quantities. This low reserve was possible because of the fact that the larger the number of sales, the more evenly they would probably be distributed throughout the production period. In the example just cited, the quantity to order into production, therefore, would be 150 for the first month, if there was no previous inventory on hand, and 100 for the following months. The planning department had to bear in mind, also, the quantity most economical to produce in setting the minimum and maximum quantities to order into production.

ITEM					Date	Basic Minimum	Basic Quantity to Order		Date	Minimum	Quantity to Order		Date	Minimum	Quantity to Order		Group
																	Lot Number
																	Unit Weight
																	Economy Run
ORDERED					RECEIVED			ISSUED			BALANCE ON HAND				APPLIED		Available or Shortage
Date	Quan.	Order Number	Rec'd	Previous	Bal. Due	Quan.	Price	Quan.	Order Number	Date	Previous	Quan.	Price	Quan.	Order Number		

EXHIBIT 1.—Sargent Manufacturing Company—Balance-of-stores card.

From the balance-of-stores quantities form, the basic minimum, 150 in the illustration used above, was entered on the card shown as Exhibit 1. This balance-of-stores card was kept by a bookkeeping-machine operator in the general office, who, besides making the entries on the card, noted when the quantity available was approaching the basic minimum. If, for example,

the basic minimum for an item was 150 and the amount available was 155, the operator would fill out a notice of minimum to be forwarded to the order clerk in the planning department, who would put through a production order.

The management was in some doubt as to whether it should continue to use this method of determining future production, since the sales of two or three previous years might have no relation whatsoever to the sales of the next year, and the arithmetical computations of the average quantities could not be relied upon as a definite index for future production. Although several executives believed that the figures obtained by such a computation should be compared with estimates of probable sales submitted by the selling department, past experience had proved that the estimates of the selling department could not be relied upon to any extent. Since neither the arithmetical index of the accountant nor the estimates of the selling department would enable the management to make intelligent estimates of the quantities of each product to be manufactured for future periods, a different procedure should be adopted. Those who held this view recommended that future production should be determined by a study of the business cycle. For example, if, after a study of the most reliable business-forecasting services, it was believed that a 15% improvement might be expected in the following year, 115% of the output of the current year should be produced in the next year. The application of this method was advised for all products at the beginning, but it was suggested that an executive keep in constant touch with the conditions of production and sales during the second year, so that he would be in a position to advise concerning cases to which this method could not profitably be applied in the future. The company was improving its budgetary procedure, and had carried this to the point where many of the executives were willing to rely upon the budgeted sales as a basis for determining stores quantities, rather than to use figures computed solely from the sales of the past.

Questions

1. Criticize the method used by the Sargent Manufacturing Company to determine future production.

31. STOUND EQUIPMENT COMPANY

Business Forecasting

In 1923 the statistician of the Stound Equipment Company was requested by the management to prepare a forecast of the probable trend of orders to be received, at selling prices, up to 1935. The method which he used in doing this was as follows:

He first obtained the actual figures for orders received for the years 1895 to 1922, which were as listed under the heading, *Actual Orders*, in Exhibit 1, and plotted them on a chart, reproduced as Exhibit 2. The logarithmic scale was used in order that the percentage changes might be emphasized. A forecast necessitated the computation and extension of a long-time, or secular, trend of orders; such a trend would show the continuous increase or decrease in the company's business over a period of years, which would be caused by factors of more permanent nature than seasonal variations, changes in general business activities, or accidental movements. In the statistician's opinion, long-time changes were caused by growth of population and of the extent of business operations, by improved industrial technique, gradual exhaustion of natural resources, and other factors which operated from year to year with approximately constant force.

The statistician believed, however, that the influence of changes in general price levels as reflected in prices of the company's products should be eliminated before this computation was made. He consequently adjusted the figures, with the exception of those for the years 1895 to 1899, to the 1922 price basis by means of an index of the sales prices of 20 standard articles produced by the company. The products represented by the articles included in the index composed approximately 50% of the company's total output.

The adjustment was made as follows: For each one of the 20 products the company's selling price for the year 1914 was listed. Then the selling price of each product in 1922 was listed, and for each product the difference in price was expressed as a percentage of the 1914 prices. These percentages then were added together and divided by 20; the result obtained, 146.5%,

EXHIBIT 1

ADJUSTMENT OF ORDERS RECEIVED, 1900-1922, TO 1922 PRICE LEVEL;
STOUND EQUIPMENT COMPANY

(Prices in 1914 = 100)

Year	Actual orders	Price indexes	Price index for 1922	Sales values of orders, adjusted to 1922 price level *
1895	\$ 1,240,000			
1896	1,000,000			
1897	1,320,000			
1898	1,590,000			
1899	2,500,000			
1900	2,629,500	100	146.5	\$ 3,852,200
1901	3,377,200	100	146.5	4,947,600
1902	3,671,100	100	146.5	5,378,200
1903	3,537,800	100	146.5	5,182,900
1904	3,192,500	100	146.5	4,677,000
1905	4,766,000	100	146.5	6,982,200
1906	5,756,300	100	146.5	8,433,000
1907	5,258,000	100	146.5	7,703,000
1908	3,822,600	100	146.5	5,600,100
1909	4,825,000	100	146.5	7,068,600
1910	6,239,900	100	146.5	9,141,500
1911	5,972,300	100	146.5	8,749,400
1912	8,341,000	100	146.5	12,219,600
1913	9,001,800	100	146.5	13,187,600
1914	6,386,200	100	146.5	9,355,800
1915	7,612,100	99.7	146.5	11,185,300
1916	13,544,200	119.6	146.5	16,590,500
1917	20,703,300	146.6	146.5	20,689,200
1918	18,961,700	167.5	146.5	16,584,400
1919	18,729,100	165.2	146.5	16,609,000
1920	25,916,500	184.2	146.5	20,612,200
1921	12,994,500	168.9	146.5	11,271,100
1922	19,049,100	146.5	146.5	19,049,100

* Calculations as shown by following examples:

1914. $\$6,386,200 \div 100 = 63,862 \times 146.5 = \$9,355,800.$ 1918. $\$18,961,700 \div 167.5 = 113,204.17 \times 146.5 = \$16,584,400.$

was taken to mean that in 1922 the 20 products, on the average, were being sold at prices 146.5% above the 1914 prices.

Although there had been moderate price changes from

1900 to 1914, they had occurred at an approximately consistent rate. This whole period, therefore, was accepted as normal, and the figures for each year in the period were adjusted in the same way as those for 1914. The figures for orders received during the years 1900 to 1914 were divided by 100 and multiplied by 146.5. The sales figures for 1915 to 1922 were divided by their respective index numbers and reduced thereby to the 1914 price basis, and then were raised to the 1922 price basis by multiplication by 146.5. For example, for the year 1918 the actual figure for orders, \$18,961,700, was divided by 167.5, the index number on the basis of 1914 as 100, and the quotient then

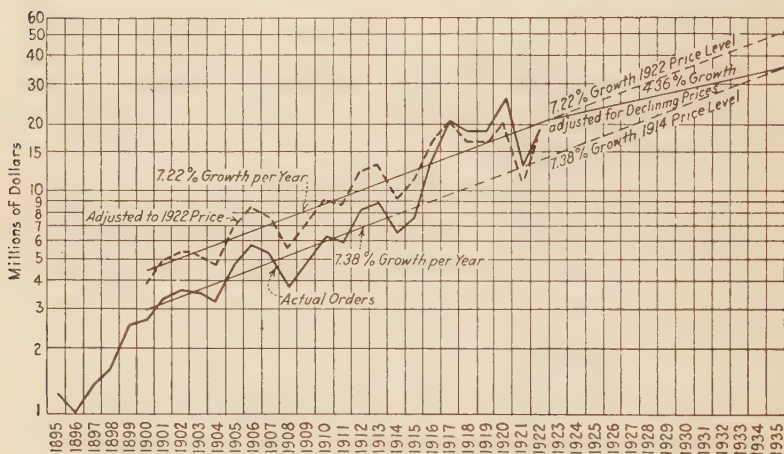


EXHIBIT 2.—Forecast of annual orders, 1923–1935, based on actual orders, 1895–1922, adjusted for secular trend and price changes.

was multiplied by 146.5, the 1922 index number. The result, \$16,584,400, was the adjusted figure for orders for 1918. The price indexes used and the adjusted figures for orders are shown in Exhibit 1.

After the adjusted figures had been obtained, the statistician calculated that the basic growth of the company's business had been at the rate of an increase of 7.22% each year over the preceding year. He therefore drew a line on the chart in Exhibit 2 to indicate that rate of growth up to 1935.

In the statistician's opinion, the war-time boom might have had a misleading effect not only on the price situation but also on

the volume of orders. For that reason, in another calculation, he disregarded the years 1915 to 1922, and computed a second secular trend by the same method on the basis of actual orders received from 1900 to 1914, inasmuch as he already had decided that the trend exhibited in that period was normal. This resulted in a trend line showing a yearly increase of 7.38%, compounded annually, which he also projected to 1935 as the lower dotted line in Exhibit 2.

Inasmuch as the price index in Exhibit 1 showed sharp declines in 1921 and 1922, the statistician wished to allow for a possible continued decline in prices. He consequently examined the trend of commodity prices from 1810 to 1920, as shown in Exhibit 3. This chart was prepared from the index numbers

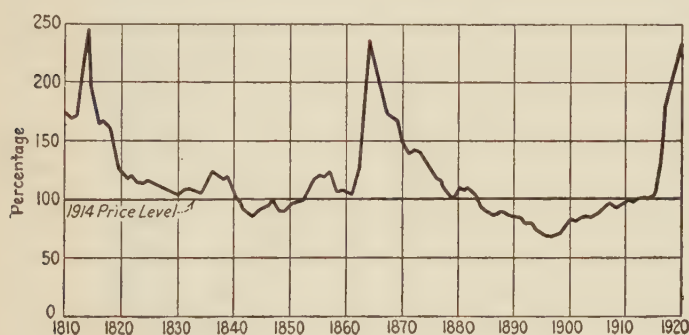


EXHIBIT 3.—Movement of wholesale prices.

for wholesale prices, for the years 1810 to 1920, with prices in 1914 taken as 100%; the index numbers are given in Exhibit 4. They constitute a continuous index number for wholesale prices, which was constructed by fitting together, on as nearly comparable a basis as possible, four independent and overlapping records of wholesale prices. From 1810 to 1825 the numbers were obtained from a record of Boston prices made by Alvin H. Hansen; from 1825 to 1860 they were computed from quotations of prices in New York in a report of Secretary Chase of the Federal Treasury in 1863; from 1860 to 1890 they were obtained from prices quoted in a report of the Finance Committee of the United States Senate in 1893; and from 1890 to 1920 they were the current wholesale price-index numbers of the United States Bureau of Labor Statistics.

EXHIBIT 4

INDEX NUMBERS FOR WHOLESALE PRICES, 1810-1920 *

(Prices in 1914 = 100)

Year	Index numbers	Year	Index numbers	Year	Index numbers
1810	173	1850	95	1890	84
1811	168	1851	97	1891	84
1812	170	1852	98	1892	79
1813	198	1853	109	1893	79
1814	247	1854	118	1894	72
1815	194	1855	121	1895	70
1816	165	1856	119	1896	67
1817	167	1857	125	1897	67
1818	163	1858	105	1898	69
1819	141	1859	107	1899	76
1820	123	1860	105	1900	83
1821	118	1861	103	1901	81
1822	121	1862	122	1902	84
1823	115	1863	168	1903	85
1824	114	1864	237	1904	84
1825	115	1865	218	1905	87
1826	113	1866	194	1906	92
1827	111	1867	174	1907	97
1828	108	1868	170	1908	92
1829	107	1869	166	1909	95
1830	103	1870	148	1910	99
1831	107	1871	137	1911	96
1832	108	1872	142	1912	100
1833	107	1873	141	1913	101
1834	104	1874	134	1914	100
1835	111	1875	126	1915	101
1836	125	1876	117	1916	124
1837	120	1877	114	1917	176
1838	116	1878	103	1918	196
1839	121	1879	99	1919	212
1840	103	1880	110	1920	244
1841	99	1881	107		
1842	88	1882	109		
1843	84	1883	103		
1844	88	1884	93		
1845	93	1885	87		
1846	95	1886	85		
1847	100	1887	85		
1848	87	1888	88		
1849	89	1889	85		

* Material taken by company from *The Annalist*, New York, Monday, Apr. 11, 1921, p. 425.

From Exhibit 3, the statistician observed that both after the War of 1812 and the Civil War there had been a rapid decline of prices during the first two to six years. This was followed by a gradual downward movement extending for about 30 years after the war-time peak; normal was reached, however, approximately 15 years after the peak. Since he was convinced that the general price situation in 1922 presented a close analogy to the price situations following the War of 1812 and the Civil War, and that consequently the movement of prices would be similar to the movements which had occurred in the past, he assumed that the price level again would reach normal 15 years after the peak, or in 1935. He decided, therefore, to make an adjustment in his estimates to compensate for such a decline in prices. Since he had determined upon the 1914 price level as normal, he reasoned that the probable volume of orders at selling price in 1935 would be shown by the projection to 1935 of the trend for the period 1900 to 1914. To indicate the probable orders to be received during the period from 1922 to 1935, therefore, the statistician drew on Exhibit 2 a line connecting the 1922 point on the 1900-1922 trend line with the 1935 point on the projection of the 1900-1914 trend line. It seemed evident that by 1922 the period of rapid price decline already had ended. From the trend line drawn to compensate for the probable decline in prices from 1922 to 1935, the statistician made his final estimate, in dollars, of the orders the company probably would receive. From these figures, the annual increase was found to approximate 4.36%. Exhibit 5 contains the forecast

EXHIBIT 5

FORECAST OF ANNUAL ORDERS TO BE RECEIVED, 1922-1935, BY STOUND
EQUIPMENT COMPANY

Year	Amounts of orders	Year	Amounts of orders
1923	\$21,180,000	1930	\$28,500,000
1924	22,080,000	1931	29,700,000
1925	23,070,000	1932	31,050,000
1926	24,050,000	1933	32,450,000
1927	25,100,000	1934	33,800,000
1928	26,180,000	1935	35,300,000
1929	27,300,000		

of orders to be received yearly, from 1922 to 1935, as determined by the readings from Exhibit 2.

Questions

1. Was the statistician correct in estimating that prices of the company's products would follow the same course as general price levels from 1922 to 1935?

2. What was the value of this forecast of conditions so far in the future?

32. LABAN COMPANY

Capital Turnover

The Laban Company, a wholesale grocery firm, adopted an accounting system in 1924 which showed the share of the total expenses of the company which was chargeable to each of its departments. In the next year the company wished to use this information to decide whether quantity discounts offered by manufacturers for large purchases were more than sufficient to offset the increased carrying charges incurred by having on hand larger stocks of merchandise than usually were needed.

The annual net sales of the Laban Company were about \$2,500,000. Its rate of stock-turn was about 4.3 times a year; in other words, its average investment in merchandise was sold out 4.3 times each year. The company's gross margin was 13.5% of net sales; its total expense, not including interest on owned capital, was 12.4% of net sales.

The results of its new accounting system were available early in 1925; the new system departmentized merchandise purchases, sales, and inventories, as well as all items of direct or indirect expense. The buyer for the general groceries department believed that this information should be used to determine whether it was profitable for his department to buy larger quantities of groceries than were currently needed, in order to get the discounts offered for large orders. To do so, meant that the capital of the company would be tied up for longer periods. Since expenses might be increased inordinately by the policy of large-order purchasing, it was necessary to make a preliminary analysis of the extent of those increases.

The items of expense to be included in the charges for carrying the larger stocks first had to be determined. Rental charges

had been allocated to each department on a basis of the ratio of the floor space required by the merchandise inventories in that department to the total floor space used by the company. Taxes and insurance had been charged to each department on a basis of the ratio existing between the average merchandise inventories of the department and the average merchandise inventories of the entire company.

If it were decided that rent, taxes, and insurance could be designated directly as carrying charges, the calculations would be as follows: The annual total of these three expenses would be calculated as a percentage of the average annual inventories valued at cost, and this percentage would be considered the annual cost, not including interest, of carrying the merchandise in stock. To this percentage would be added interest on the investment represented by the merchandise, computed at the average rate of interest which the company paid on its bank borrowings. The general groceries department's monthly carrying charges calculated in this way were 1.05% of the average annual departmental inventory, as shown in Exhibit 1.

The vice president of the Laban Company expressed the opinion, however, that rent should not be considered as a cost of carrying merchandise. Any change one way or the other in the method of purchasing individual items neither would permit the company to reduce its rent nor make necessary the engagement of outside storage space. It had been the company's experience, furthermore, that local taxes fluctuated but little; the company's assessments had been changed only once in several years. For these reasons, the vice president decided that carrying charges should consist only of interest and insurance.

The company recognized that calculations based entirely upon these two items of expense would not be absolutely correct. For example, if the total inventory which the company maintained were reduced by 25%, the number of warehouse employees could be decreased. A material decrease in the total inventory accompanied by more frequent purchases of smaller quantities would result, on the other hand, in increased unit costs of inward cartage, handling, and billing.

The company was able to borrow ample capital, so the question was not raised as to whether the use of additional capital to obtain quantity discounts would detract from the possibility

EXHIBIT 1

MONTHLY CARRYING CHARGES, LABAN COMPANY

(Percentages calculated for general groceries department based on rent, taxes, insurance, and interest, relative to average departmental inventory)

Total Rent Allocated to General Groceries Department...	\$ 3,611
Total Taxes Allocated to General Groceries Department..	2,392
Total Insurance Allocated to General Groceries Department	496
<hr/>	
Total	\$ 6,499
Average of Beginning, Middle, and Ending Inventories at Cost in General Groceries Department.....	\$91,759
Percentage of Rent, Taxes, and Insurance to Average Inventory	7.08%
Average Annual Interest Rate.....	5.50
<hr/>	
Percentage of Total Annual Carrying Charges to Average Inventory	12.58%
Percentage of Total Monthly Carrying Charges to Average Inventory	1.05%

of purchasing other lines on which added net profits might be secured.

The total monthly carrying charges for the general groceries department, calculated on a basis of interest and insurance alone, amounted to 1.5% of the average annual departmental inventory, as shown in Exhibit 2.

EXHIBIT 2

MONTHLY CARRYING CHARGES, LABAN COMPANY

(Percentages calculated for general groceries department based on insurance and interest, relative to average departmental inventory)

Average of Beginning, Middle, and Ending Inventories at Cost in General Groceries Department.....	\$91,759
Total Insurance Allocated to General Groceries Department	496
Insurance as Percentage of Average Inventory.....	0.5%
Average Annual Interest Rate.....	5.5%
<hr/>	
Percentage of Total Annual Carrying Charges to Average Inventory	6.0%
Percentage of Total Monthly Carrying Charges to Average Inventory	0.5%

The buyer reasoned that in determining the carrying charges incurred by large purchases the company should remember that normally it expected to carry in stock about a month's supply of most items. That is, if the quantity purchased were a four

months' supply, the carrying charges for four months should not be used as a basis for judging the profit to be obtained from the quantity discount; before the carrying charges were calculated, one month's supply should be subtracted from the quantity considered. On this basis, the company analyzed, for the purpose of determining the net profit to be obtained from taking quantity discounts, two items which were stable in price,² not subject to deterioration, and which showed satisfactory net profits. The company's calculations are shown in the following two examples.

The first example is for a commodity which cost \$2.25 a case, of which the company sold 25 cases each month, and on which the manufacturer gave a discount of 15 cents a case for purchases in 100-case lots. The second example is for a commodity costing \$5 a case, of which the company ordinarily sold 32 cases

² Price fluctuations had to be given careful considerations in such an analysis of individual items. The general nature of fluctuations in wholesale and retail food prices is indicated by the following data:

WHOLESALE AND RETAIL FOOD PRICE INDEXES *
(1913=100)

	1923		1924		1925	
	Whole-sale	Retail	Whole-sale	Retail	Whole-sale	Retail
January.....	141	144	143	149	160	154
February.....	141	142	143	147	157	151
March.....	143	142	141	144	159	151
April.....	144	143	137	141		
May.....	144	143	137	141		
June.....	142	144	136	142		
July.....	141	147	139	143		
August.....	142	146	144	144		
September.....	147	149	148	147		
October.....	148	150	152	149		
November.....	148	151	154	150		
December.....	147	150	158	152		
Average.....	144	146	144	146		

* *Standard Daily Trade Service; Statistical Bulletin*, 2nd Quarter, 1925, pp. 37 and 35.

a month, and of which it was required to purchase 100 cases in order to obtain a discount of $12\frac{1}{2}$ cents a case. Satisfactory deliveries on these items could be obtained for purchases in either large or small quantities. The company did not contemplate making any changes in the resale prices.

Computations of net savings resulting from purchase of the two sample commodities in quantities large enough to obtain manufacturers' quantity discounts were as shown in the two following examples:

Example 1

\$2.25 per Case, 25 Cases Purchased each Month	= \$225.00	} Cost of 4 Months' Sales
2.10 per Case, 100 Cases Purchased at One Time	= 210.00	
Total Saving by Taking Quantity Discount.....	= 15.00	

Calculation of Carrying Charges on Purchase of 100 Cases:

75 Cases at \$2.10	1 Month = \$157.50
50 Cases at 2.10	1 Month = 105.00
25 Cases at 2.10	1 Month = 52.50

Total Extra Capital Required During Period
to Obtain Quantity Discount..... \$315.00

$\$315 \times 0.5\%$ (percentage of carrying charges to average inventory, Exhibit 2) = \$1.58 = Carrying Charges.

$\$15 - \$1.58 = \$13.42 =$ Net Saving.

$\$13.42 \div \$225 = 5.96\% =$ Saving on Cost of 4 Months' Sales. (This 5.96% is the actual saving based on the original cost of 4 months' sales, which was \$225.)

Example 2

\$5 per Case, 32 Cases Purchased each Month....	= \$500.00	} Cost of $3\frac{1}{8}$ Months' Sales
4.87½ per Case, 100 Cases Purchased at One Time	= 487.50	
Total Saving by Taking Quantity Discount.....	= 12.50	

Calculation of Carrying Charges on Purchase
of 100 Cases:

68 Cases at \$4.875	1 Month = \$331.50
36 Cases at \$4.875	1 Month = 175.50
4 Cases at \$4.875	1 Month = 19.50

Total Extra Capital Required During Period
to Obtain Quantity Discount..... \$526.50

$\$526.50 \times 0.5\% = \2.63 Carrying Charges.

$\$12.50 - \$2.63 = \$9.87 =$ Net Saving.

$\$9.87 \div \$500 = 1.97\% =$ Saving on Cost of $3\frac{1}{8}$ Months' Sales. (This 1.97% is the actual saving based on the original cost of $3\frac{1}{8}$ months' sales, which was \$500.)

Questions

1. Why was interest on investment regarded as an expense in figuring carrying charges?

2. Should the Laban Company have decided to purchase these two items in lots of one month's or four months' supplies?

3. Would the decision have been different if the commodities had been:

- a. Highly perishable;
- b. Subject to rapid price changes;
- c. Style goods?

33. ALLIS-CHALMERS-MANUFACTURING COMPANY³

Financial Ratios

The Allis-Chalmers Manufacturing Company specialized in the manufacture of equipment for industrial, mining, and farm use, and in the making of heavy power-plant units. The company was one of the leading ones in the industry, and except for a setback in 1920-1921, its operations had been successful.

The company had published its financial statements regularly for many years. The following analysis of its corporate status is based on its condition as reflected by the more important financial ratios. The use of ratios in analyzing balance sheets is not new. The *current ratio* has long been familiar, but the development of many other ratios is comparatively recent. In the credit analysis of a business, financial ratios should be used primarily to supplement the information already obtained from various other sources. Although ratios serve principally as a mathematical check upon views already formed concerning the business, their use frequently reveals conditions not previously recognized. The changes in ratios from one year to another sometimes show a definite trend and almost always throw light upon the general policies being followed by a business.

It is interesting to examine series of such ratios with a view

³ The material contained in this case is adapted from the second of two articles by W. L. Crum which appeared in *Barron's*, Aug. 6 and 13, 1928. W. F. Morton assisted Mr. Crum in the compilation and interpretation of the financial statistics presented in this article.

to determining the condition of Allis-Chalmers at various stages of recent business cycles. In order to compare these ratios with changes in general business, the more important have been charted with pig-iron production⁴ in the United States, expressed as percentages of the normal trend and corrected for seasonal variation. This chart is shown in Exhibit 1.

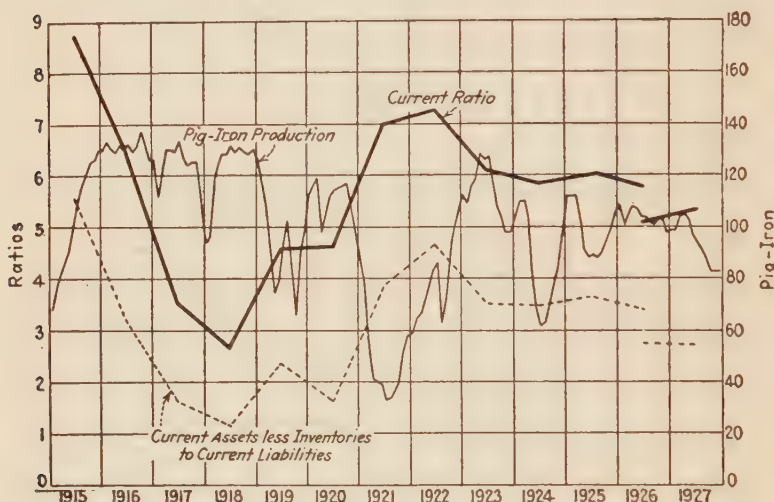


EXHIBIT 1.

Current Assets and Liabilities.—The *current ratio* is the most important and most inclusive of the ratios bearing upon the current position of a company. Allis-Chalmers has consistently maintained a strong current ratio, the lowest point reached being 2.68 in 1918, while the average for the period 1915–1926 was 5.72. The curve for the current ratio figure is shown in Exhibit 1. No clear trend, either upward or downward, is noticeable; but there have been short-time variations inverse to the general business cycle. In 1920 the current ratio was higher (4.61) than in any of the previous three years, and in 1921–1922 it increased to 7.00 and 7.27, respectively. In the following years, it remained between 5.0 and 6.0.

⁴ The curve for pig-iron production is used as a standard of reference, rather than some curve of general business activity, because it peculiarly reflects conditions in basic business.

During every period of brisk business activity, conditions develop under which the value of both receivables and inventories becomes increasingly unstable. In the successive stages of the business cycle there is a marked difference in the liquidity of current assets, a difference of which definite account should unquestionably be taken in studying a company's credit position. A current ratio that was entirely adequate in 1915 or 1916 had become insufficient in 1918 or 1919; and, in the case of many industries, it was dangerously below the safety line. For the same company a smaller current ratio shown in a period in the business cycle after deflation has taken place and when business is on a sound basis, as in 1922 and 1923, may be preferable to a higher ratio shown in a period of prosperity when prices and business activity are near the peak. The fact that Allis-Chalmers had much higher current ratios in the years following 1920 than from 1917 to 1920 indicates that the improvement in its credit position after 1920 was even greater than could be inferred from the actual figures.

Inventories.—While receivables and inventories are usually regarded as being readily convertible into cash, both are subject to many uncertainties and both may react differently to outside influences; consequently, the current ratio is faulty in that it groups current assets together and makes no distinction between them. The Allis-Chalmers inventories, consisting largely of basic raw materials such as iron, steel, and copper, are subject to considerable fluctuations in market value. As in most concerns, its inventory is the least liquid of its current assets and the *ratio of current assets less inventories to current liabilities*, the curve of which is shown in Exhibit 1, indicates the large influence of this one asset on the company's credit position. Whereas all current assets covered current liabilities 2.68 times in 1918 and 4.61 times in 1920, without inventories they covered liabilities only 1.19 and 1.63 times in these two years. As soon as the large stocks accumulated prior to 1920 were worked off, however, the ratio rose to very satisfactory levels and has since remained above 3.5 to 1.

Distribution of Current Assets.—The proportion of *cash to current assets* remained about constant during the entire period until the refinancing of 1927. While a high ratio ordinarily indicates great liquidity, the more nearly a company can keep

all its funds employed, yet reserve a sufficient margin of idle cash for safety, the better is its position.

No trend is noticeable in the percentage of *current assets* represented by *receivables*. This ratio declined from 1917 to 1919, increased to 1923, and has since then moved in a narrow range below the level then reached.

The growth of the proportion of *inventories* to *current assets* from 36.2% in 1915 to 64.6% in 1920 indicates the company's tendency to become less liquid as inflation proceeded. Following the drastic deflation of 1920-1921, this ratio immediately dropped to 44.7% and has fluctuated within moderate limits during recent years.

The outstanding feature of the series indicating the proportion of *marketable securities* to *current assets* is the irregularity evident from 1915 to 1920. Large amounts of marketable securities were evidently maintained with which to purchase materials; thus, large increases in the inventory ratio during this period are accompanied by corresponding declines in the proportion of marketable securities; and, as the proportion of inventories declined after 1922, the proportion of liquid securities increased. Following the deflation, a relatively large proportion of current assets was maintained in marketable securities. This fact indicates that the company's position was made more secure by the more liquid form of its current assets. Thus, not only was the current ratio higher than in the critical years 1917-1920, but the liquidity of current assets was greater.

An increase in the *ratio of inventories* to *receivables* indicates that merchandise inventories are being accumulated more rapidly than they are being sold. While such an increase may be satisfactory during a period of rising prices, a high ratio near the peak of prosperity would indicate that there existed a possibility of severe loss when the drop in prices came. The Allis-Chalmers ratio of inventories to receivables increased steadily during the inflation years to a high point of 2.94 in 1919, declined sharply in 1921 and 1922, increased moderately from 1.38 in 1922 to 1.82 in 1926, but dropped back slightly in 1927. The improvement over this last period is a further element of strength in the Allis-Chalmers credit position.

Volume of Business.—The *ratio of sales billed* to *total assets* indicates the effectiveness with which all of a company's invested

capital is being employed, and is the simple numerical index of the ability of the management and of the sufficiency of the capital employed. As might be expected, this ratio shows cyclical tendencies over a series of years dependent on the extent to which Allis-Chalmers' sales were affected by changing business conditions. The increase from 25.6% in 1915 to 54.9% in 1918 was due to the abnormal volume of war business, and the decline to 34.9% in 1922 resulted from the sharp falling off in sales. The most important feature of this series, however, is the steady improvement which since 1922 reflects the management's ability to secure an increasing volume of sales without corresponding increases in the company's assets.

A similar ratio is that of *sales to fixed assets*, indicating the effectiveness with which the plant is being utilized. The property account comprises about 50% of the total assets of Allis-Chalmers, and this ratio tells much the same story as that of sales to total assets. The increase up to 1918 and the high levels due to the artificial stimulus of inflation in 1919 and 1920, the steady decline to 1922 during deflation, and the consistent improvement since as a result of increasing managerial efficiency, appear clearly in the record of this ratio. The ability to produce constantly larger amounts of goods with the same productive facilities—the property account has remained stable since 1922—is the best evidence of the progressive management.

The purpose of the *ratio of sales billed to receivables* is to indicate the comparative length of the credit terms offered customers: a lower ratio signifies either longer credit terms, or an increase of slow or frozen accounts. The solid curve of Exhibit 2 shows that Allis-Chalmers had good control of its credits during inflation. The low ratios in 1920–1923 reflect the increased volume of frozen credits that the company had to carry during this period, although even in 1922 and 1923 the ratio was only slightly lower than in the early war year 1915. The steady increase following 1923, without the aid of abnormal sales increases, shows clearly the improved credit and collection policies that are elements of considerable strength in the high credit standing of Allis-Chalmers.

The *ratio of sales billed to inventories* determines the rate of turnover of inventories: a high ratio indicates a rapid stock-turn with less probability of any considerable quantity of

unmovable merchandise being included. The dotted curve of Exhibit 2 shows that, with the rapid accumulation of inventories up to 1920, this series declined steadily, that the rate of stock-turn increased substantially with the liquidation in 1921-1923, and that further improvement in 1924 and 1925 reflected increased managerial efficiency in expanding sales without corresponding increases in inventories. Continued improvement in this ratio reduces distinctly the possibility of disastrous inventory loss. Allis-Chalmers' sales consist chiefly of special

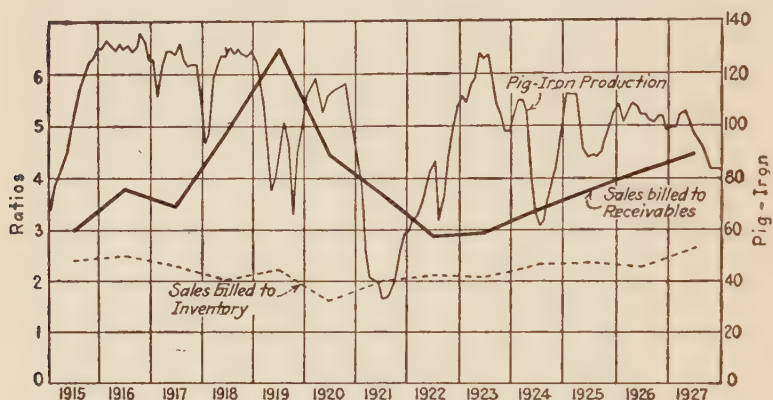


EXHIBIT 2.

heavy equipment, so that a relatively low rate of stock-turn is to be expected.

The Net Worth Ratios.—The ratio of net worth to total assets is generally the most significant of all net-worth ratios. It shows the proportion of capital employed that has been contributed by the owners, and thus indicates the percentage of loss which the business may undergo before its ultimate solvency is affected. Allis-Chalmers has shown a very high ratio, even in the years of inflation when outside indebtedness was heaviest. Since 1920 this ratio remained around 90%, until the refinancing of 1927. Through 1926, capital stock outstanding remained at the same figure; and, although total assets increased steadily, sufficient earnings were reinvested to maintain the ratio about constant. Likewise, as the ratio of net worth to property account increased steadily from 1920 to 1926, fixed assets have not increased as rapidly as earnings have been reinvested.

The statement for the year 1927 shows an even more favorable condition, a condition but recently recognized by an increased rate of dividend on the common stock. The recent decline in the proportion of securities to current assets is due to the fact that \$3,750,000 were liquidated for use in the retirement of the preferred stock. The ratios of net worth to property and net worth to total assets, of course, declined sharply, inasmuch as a debt item was substituted for an ownership item.

Questions

1. List the ratios studied in the preceding article, and explain what each indicates regarding the financial affairs of the company.

2. Why is it of special value to study a series of ratios rather than a ratio for a single year?

CHAPTER XII

CREDITS AND COLLECTIONS¹

34. CATHEDRAL NATIONAL BANK

Credit Analysis—Sources of Information

In March, 1926, an officer of the Stearns Confectionery Company began to negotiate with the Cathedral National Bank of New York for a loan of \$100,000. In accordance with the usual custom, the credit department of the bank examined the past balance sheets of the company and checked its reputation with the trade and with banks with which it had done business; finally, one of the senior vice presidents made a report on the company's history and management. The officers of the bank were not acquainted personally with the executives of the company. The balance sheets shown in Exhibit 1 indicated that the Stearns Confectionery Company had prospered and was in a sound financial condition.

Checkings from the trade were favorable without exception. The company's competitors stated that the management was able and that bills were paid promptly. Bills with sugar refineries and jobbers were discounted regularly. One jobber placed a limit of \$15,000 on the account, but the remaining sugar dealers stated that they would not hesitate to fill an order of any size from the Stearns Confectionery Company. Purchases, however, always had been moderate.

The reports from banks were equally favorable; balances carried were excellent, and the borrowings moderate. The commercial paper firm which had sold the Stearns Confectionery Company's paper confirmed the high opinion of the management held by the banks. It had taken the Stearns Confectionery

¹ DUTTON, pp. 220-275; JONES, 586-606; LINCOLN, 364-511, 662-700; MARSHALL, 410-420; 488-501.

Company's business despite the fact that its custom usually was to refuse to sell the paper of so small a concern.

EXHIBIT 1

BALANCE SHEETS OF THE STEARNS CONFECTIONERY COMPANY

(000 omitted)

	Dec. 31, 1923	Dec. 31, 1924	Dec. 31, 1925	May 1, 1926
ASSETS				
Cash.....	\$ 16	\$ 8	\$ 10	\$ 9
Receivables.....	102	70	98	105
Inventory.....	175	210	253	321
	—	—	—	—
Total Current Assets.....	\$293	\$288	\$361	\$ 435
Fixed Assets.....	262	322	313	360
Good Will.....	200	200	200	200
Other Assets.....	142	16	28	116
	—	—	—	—
Total Assets.....	\$897	\$826	\$902	\$1,111
LIABILITIES				
Notes Payable.....	\$ 16	\$ 47	\$ 43	\$ 114
Accounts Payable.....	54	80	93	68
Sundries.....	7	11	30	34
	—	—	—	—
Total Current Liabilities...	\$ 77	\$138	\$166	\$ 216
Miscellaneous.....	...	6	...	38
Mortgage.....	25	25	25	65
Capital Stock.....	700	569	569	680
Surplus.....	95	88	142	112
	—	—	—	—
Total Liabilities.....	\$897	\$826	\$902	\$1,111
Ratios:*				
Current.....	381%	200%	217%	201%
Cash to Current Liabilities.	20.8	6	6	4.2
Fixed Assets to Net Worth.	33	49	44	45.5
Total Debt to Net Worth..	12.8	24.8	27	35.4

* For a complete discussion of ratios, see BLISS, J. H., *Financial and Operating Ratios in Management*. The Ronald Press Company, New York, 1928.

The Cathedral National Bank had correspondence in its files relating to the Stearns Confectionery Company, dated the latter

part of 1916, which was not favorable. R. G. Dun & Company² reported that the president of the Stearns Confectionery Company, James Hughes, was a capable candy manufacturer but not a shrewd buyer or an able financier. He was looked upon as extravagant in his personal expenditures. Another statement to the same effect came from a former stockholder who had severed his relations with the company in October, 1923, because of his lack of faith in the ability of the management.

The vice president of the Cathedral National Bank on May 19, 1926, reported as follows:

STEARNS CONFECTIONERY COMPANY

History.—This business was started some 20 years ago, under the name of Cotton and Company. Some 4 years ago they moved to their present location and consolidated with the Holcomb Confectionery Company. Mr. Hughes, the president of the company, has been with the business ever since its inception, and in 1924, owing to dissensions in management, he bought out his partners, paying them \$175,000 in cash and notes. The indebtedness thus incurred has since been paid from earnings. New money for working capital was obtained for the business at that time by the sale of \$100,000 of stock by James Farley & Company.

Officers.—James Hughes, president, D. S. Bartlett, treasurer.

Principal Directors.—J. F. Rote, of the North River Trust Company, James Farley, of James Farley and Company.

Capital Stock.—\$680,000, of which Hughes and his friends own a controlling interest of 51%.

Banks.—North River Trust Company (line \$45,000), Murray Hill National Bank (line \$35,000).

R. E. Goldsby & Company has \$50,000 of the paper. Mr. Bartlett intimated that the paper had not sold very well recently, principally, he thinks, on account of the mortgage placed on the plant. The company recently sold \$45,000 new capital stock at 50, paying 8%.

They want from us \$100,000, \$50,000 to take up the paper with Goldsby and \$50,000 to meet payments on plant. When the new

² R. G. Dun & Company was a concern which undertook to give credit ratings to merchants and manufacturing firms. It employed agents who solicited credit information from banks, from investment firms, and from companies which sold goods to the concern being investigated; the reputation on the street also was checked. Statements of earnings and sales were obtained whenever possible.

building was planned, it was figured that total cost would be somewhere around \$125,000, but now it is estimated that it will be at least \$175,000.

Mortgage.—There was originally a mortgage of \$25,000 on the building. In order to build the new addition, this was increased to \$125,000 through the Textile Mutual Savings Bank.

Plant.—The company's present plant without the new addition is a five-story building of cement and steel. It is in excellent condition and well equipped for the purpose of manufacturing candy of all kinds. It is, however, entirely inadequate for the amount of business done, and is much overcrowded. The new building is a five-story addition, doubling the capacity of the plant, and likewise constructed of cement and steel. The increased cost of construction over the estimate is caused principally by the refrigerating system. It seems that every candy plant has to make its own ice, in order that the temperature where the goods are stored may be kept below a certain degree, and this necessitates an elaborate cooling system. The old system was considered inadequate and the new one is going to be very expensive. There is no question but that the plant is a good one and put up to stay, and that it will greatly help the progress of the company.

Earnings.—In 1924, the company made, over dividends, \$22,000 on a business of \$1,250,000, after paying 8% on the common and 7% on the preferred stock. In 1926, on a business of \$1,750,000, the company made \$98,000, less dividends of \$42,000, a net gain of \$56,000.

Trade.—The sales are made on a 10-day basis to the jobbing trade only, and Mr. Bartlett states that their accounts will average very nearly 20 days. He said that if this were not so they could not begin to do the volume of business now going on. Their losses are less than 1/10 of 1%.

General Comments.—Mr. Bartlett did not seem to be well informed about the details of the business and stated frankly that Mr. Hughes was the working manager and head of the business generally, and that he went to him for all advice. He said that Mr. Hill, of the North River Trust Company, was very much interested and helped out with advice. He said, "We would like very much indeed to have your bank loan us some money. We are turning down business all the time. We could do 25% to 30% more if we had the capital, but the main reason we should like to have it would be to take up the paper held by Goldsby which isn't selling very well; the extra \$50,000 we would like to use on our plant, in order to avoid taking out more working capital. If we had this extra money, we would be in good shape and could look forward to exceptional business the coming year. We are not hard

pressed even now. We only owe the North River \$20,000 and the Murray Hill \$15,000."

Opinion.—I don't think there is any question but that this company is doing a large business and it is also apparent that they are making money. The only question in my mind is whether they are putting too much money in the plant. The new building is a fine one and almost completed. It undoubtedly will help in production, but it is a tremendous expense. For instance, when I was going through yesterday, they were putting in the refrigerating pipes, and there is evidently a lot of money still to be spent. I don't think Bartlett knows anything about the business, but simply keeps the books and looks after business and systems, etc. Mr. Hughes is evidently the whole thing. He was away and I didn't meet him. I think it might be well worth while to take a chance on the concern. Two years of good business would put them in good shape to be a good customer, providing that everything goes smoothly in the meanwhile.

WOL 5/16/26

No current opinions concerning the company were obtained from Dun's or Bradstreet's. The bank executives considered that the checkings and reports shown on pages 192-195 represented a much more thorough analysis of the credit situation of the Stearns Confectionery Company than could be given by any of the agencies mentioned.

TRADE CHECKINGS

Yonkers Confectionery Company. Of course, this concern is a competitor of ours. They do a big business and always pay their bills. They are well managed and have capable people at the head. Their future prospects are very good.

JMB 3/6/26

Bronx Sugar Company (Slyde). We gladly sell them their full requirements, although we have a limit of \$15,000 placed against their name; they would not purchase above that amount, anyway. They have been on our books up to about \$4,000 at a time. Our terms of 2% discount 7 days are adhered to in practically every instance by them. We have every confidence in them and believe the management to be competent in all respects.

DEM 3/6/26

Hallam Chocolate Company. The account of the Stearns Confectionery Company is the kind we like to carry, as they always discount their bills. We have sold them in quite large volume for years and have never questioned entering them on our books, regardless of the size of their order.

DEM 3/6/26

BANK CHECKINGS

Textile Mutual Savings Bank. This company, of course, does not maintain balances here. Our only interest in it is that of mortgagee. The mortgage which we hold on its plant amounts to \$25,000 at the present time. The plant is well equipped and is in good condition. Messrs. Hughes and Bartlett, who comprise the management, are favorably known to us. It is our opinion that the concern is doing a good business and is making progress. CKM 3/7/26

Murray Hill National Bank. They maintain a good account here. We grant a line of credit of \$25,000 on single-name paper. They are owing us today, but loans here have not been continuous. Nice balances are carried. We think well of the management and believe that they are conducting the business along profitable lines. The company has a good plant and we believe that it has made satisfactory progress since reorganization a year or so ago. We think well of Mr. Hughes. CKM 3/6/26

COMMERCIAL PAPER HOUSE CHECKING

R. E. Goldsby Company. This company represents a reorganization made some time ago of the Rockwood Chocolate Company and the Holcomb Confectionery Company. It manufactures "Stearns" chocolates and various grades of candy which it sells through jobbers. The plant, which is advantageously located in the Bronx, New York, is well equipped and thoroughly up-to-date in every particular. The company's sales for the calendar year 1918 amounted to about \$1,738,881, upon which net profits of approximately \$98,357 were realized. Dividends of 7% were paid on preferred stock and 8% on common. We only recently secured the account, making a commitment for \$25,000 of the paper, all of which incidentally was easily sold. The financial statement dated Dec. 31 last discloses total assets of \$901,000 and, although we are not usually attracted by companies of relatively small proportions, we entertain a good opinion of this concern. The ratio between quick assets and current liabilities is better than two to one. The management is good. Previous to the reorganization of the business, they probably were not in very good financial condition and were not making much progress, but under the present management they have indeed made a very nice start, and we think their future prospects are good. D. S. Bartlett, the treasurer, gives able attention to the financial end of the business, while James Hughes, who previously had been interested in the concern, devotes his attention to the management of the factory. Mr. Bartlett formerly was with a large

safety-razor company and had experience there as factory manager and as treasurer. We have investigated the company carefully and are satisfied with the result. In the trade, we were told by four reputable authorities that the company maintains a discount bill-paying record and that they think well enough of it to grant unlimited credit. One large house informed us that, while discounts were not taken, probably because terms were not sufficiently attractive, payments were made promptly, and willingness was expressed to sell full requirements. The company carries insurance of \$650,000 on plant and merchandise. It has a mortgage of \$25,000 on the plant. The mortgage was given to a New York Savings bank and matures in five years. There is no contingent liability. CKM 3/6/26

OTHER CHECKINGS

R. G. Dun & Company (Hughes). This concern has been doing a good business and in years past has made money. When they started, their gross business amounted to around \$35,000 annually. Today they probably are doing a gross business of somewhere around \$1,250,000 annually. The candy business at the present time, however, is not so profitable. Competition is very keen, material is high, and running expenses have increased. These factors, no doubt, cut somewhat into the profits. The concern is, and has always been, well regarded in the trade. They discount their bills and have unlimited credit. The reorganization should not affect them seriously. They bank with the North River Trust Company and the Murray Hill National Bank. Their future, however, remains to be seen. Hughes is regarded by some as being a clever candy manufacturer but not a shrewd buyer or an able financier. He is looked upon as being a high liver. He pays \$1,300 a year rent for his home and maintains a Packard limousine, a Packard touring car, and a roadster. His salary is \$10,000 a year.

JMAD 9/27/23

George G. Rainey. We became dissatisfied with Hughes' management of this concern and recently sold for cash our stock, which amounted to around \$270,000. Hughes, in our opinion, understands the candy business thoroughly but is a poor executive. He is honest, and all his mistakes have been mistakes of judgment. He, no doubt, spends all he makes. His family is very extravagant. The concern is sound financially and is doing a good business. In the reorganization the one poor move which they have made was in permitting the Varney Chocolate Company, a concern controlled by Martz & Company, to purchase their stock. It means that they will become somewhat tied

to the Varney people and, no doubt, will be forced to purchase their raw chocolate from them and accept their prices.

JMAD 10/2/23

Questions

1. Should the Cathedral National Bank have granted the request of the Stearns Confectionery Company for a loan of \$100,000?

2. If so, on what grounds should the loan have been made?

3. What restrictions, if any, should have been imposed?

4. Was the credit analysis an adequate appraisal of the pertinent considerations?

35. AUTOMOBILE FINANCE CORPORATION

Selection of Credit Instruments for Financing Automobile Dealers' Purchases

The Automobile Finance Corporation was established in Boston early in 1922 to finance the purchases and installment sales of automobile dealers. One of its problems was the selection of the type of security to use in the financing of dealers' purchases.

There were several steps in the financing of the automotive industry. The manufacturer borrowed from the bank on an open line of credit for the purchase of raw materials, the payment of wages, and other production expenses. When the finished product was shipped, the manufacturer drew a sight draft on the dealer and discounted it with bills of lading attached at the manufacturer's bank. This bank notified its correspondent bank in the dealer's city that it possessed such a draft and forwarded it with the bills of lading. The correspondent bank then informed the dealer that he could obtain the bills of lading by payment of the draft. In order to meet the sight draft, the dealer borrowed from his bank, with the automobile as collateral, or arranged with a finance corporation to make payment.

Seventy per cent of the automobile sales to consumers were made upon a time basis. The capital of the dealer often was insufficient to finance the installment sales. The customers' notes, which were secured by liens on the automobiles, were sold to a bank or finance company. If they were sold to a finance

company, it discounted them at the bank, which in this instance had the additional security of the finance company's endorsement.

Approximately 60% of the automobiles were sold to the ultimate consumer during the three months of February, March, and April. In order to be able to supply the demand promptly in the spring and to enable the manufacturer to produce regularly, the dealer was compelled to accumulate a large inventory during the late fall and early winter.

There were four possible forms of security for financing dealers' purchases: the trust receipt, the warehouse receipt, the chattel mortgage, and the conditional-sales contract. The Automobile Finance Corporation learned that each of these methods was then in use. It appeared, however, that the selection made by the finance companies had been based upon the past experience of their officers in other lines of business, rather than upon a study of the value of each method in financing the purchases of automobile dealers. The Automobile Finance Corporation decided to investigate the procedure involved and the security given by the use of each.

If the dealer was unable to finance a shipment with his own capital, he went to the automobile finance company with which he had established relations and notified it of the value of the shipment. The finance company drew a check payable to the bank involved for 80 to 100% of the face value of the draft, the dealer supplying any balance required, and, unless the dealer was an old customer, sent its own clerk to the bank to pay the draft and to obtain the bills of lading for the shipment.

At this point, the finance company, through the bills of lading, had possession of and title to the automobiles. One method for the dealer to obtain possession was to execute a trust receipt in which he promised to hold the automobiles in trust for the finance company with permission to resell provided the identical proceeds from such sales, to the amount of the trust receipt, were given to the finance company. The dealer paid the freight charges and war tax and placed the machines on his sales floor.

This method of financing was an extension to domestic transactions of the trust receipt as used in foreign trade. The security of the finance company lay in the fact that it had title to the car and could obtain possession at any time. If the dealer

went into bankruptcy, for instance, the finance company could claim the automobiles covered by the trust receipt from the trustee in bankruptcy. If the dealer sold an automobile covered by a trust receipt without giving the proceeds to the finance company, the latter could not claim the automobile from the purchaser. Although the finance company expressly reserved title to the automobile, the fact that permission to resell had been given and that the machine was on the sales floor, apparently the property of the dealer, negated this provision. The buyer of the car, therefore, was a bona fide purchaser without notice and secured a good title.

If the finance company could trace the identical proceeds of an automobile wrongfully sold, the company legally could claim such funds, even if they had been pledged to another creditor. The company, holding a trust receipt, could claim from the bank account of the dealer the sum placed there from the sale of an automobile for which the finance company held the trust receipt. If funds were not adequate to meet the claim of all holders of trust receipts, the proceeds from the sale of whose property was in the bank, the tendency of the courts was to an equal division of the funds available.

On investigation, the officers of the company learned that a securities corporation had discontinued financing machines on the sales floor because of the difficulty of insuring that the dealers did not convert the automobiles to their own use and withhold payment. This had occurred in spite of the use of "checkers" who had visited periodically the customers of the company and compared the numbers of the cars actually on the sales floor with the numbers of the automobiles on which the finance company had loaned. Another dealer, however, had had no difficulty from this source. It was possible to bond the dealer against conversion. This was an absolute protection against loss from conversion and involved comparatively little expense. Banks in general were averse to loaning on automobiles on the sales floor because they were of the opinion that a dealer who did not have sufficient capital to finance his inventory was not a good credit risk.

It was said that in order to obtain the full benefits of a trust receipt, it should be used only when the title to the property was given to the holder of the trust receipt by a third party, not by

the trustee. Otherwise, a trust receipt possessed no more security than an unrecorded chattel mortgage or a private agreement.

When warehouse receipts were used in place of trust receipts, the shipment of automobiles was taken to a bonded warehouse rather than placed on the floor for sale. Warehouse receipts were issued in the name of the finance company for each machine. The company did not give the dealer possession until he had paid the amount of the note for which the warehouse receipt was collateral. In this way the finance company was protected fully against loss by the failure of the dealer to fulfill his obligations. The tendency had been toward the use of the non-negotiable warehouse receipt, which obviated the necessity of filing a bond for twice the value of the automobile if the finance company should wish to remove it when the warehouse receipt was lost. A non-negotiable warehouse receipt also gave greater security against third parties. If, for instance, the finance company gave a dealer a negotiable warehouse receipt under a trust receipt and the dealer sold, pledged, or mortgaged the warehouse receipt, the finance company could not repossess the warehouse receipt.

Under the chattel-mortgage arrangement, the finance company loaned the dealer the funds with which to pay the draft held by the bank and took a chattel mortgage as security for the automobile placed on the sales floor. A mortgage afforded the greatest security but required more detailed arrangements. To make it effective against third persons, recording was necessary. This involved an expense of \$2 and the time necessary for recording when the mortgage was executed and for extinguishing when the loan was liquidated. Some dealers also might object to the use of the chattel mortgage because of the prejudice that recording a chattel loan would injure their credit. A finance company which used a chattel mortgage said that the psychological effect of having the dealer sign such an instrument tended to lessen the probability of his converting the automobile to his own use.

Under the conditional-sales arrangement, the finance company secured title to the automobiles as before and resold the machines to the dealer with a conditional-sales contract as security. The contract provided that the title to the automobile did not pass until the wholesale price had been paid. As in the case of the trust receipt, however, this provision was not

effective against a bona fide purchaser without notice. It was, however, enforceable against the trustee in bankruptcy. The finance company could not repossess the automobiles until default by the dealer. In 1920, when conditional-sales contracts were recorded, an automobile finance corporation did not prevail against a bona fide purchaser because of failure to record the instrument. In 1922, it was not necessary to record a conditional-sales contract. It was possible that even a recorded chattel mortgage might not be enforceable against a bona fide purchaser because of the permission given by the mortgagee to resell.

Questions

1. What kind of credit instrument should the Automobile Finance Corporation have used in financing the purchases of automobile dealers?

2. Discuss the advantages and disadvantages, from the point of view of the dealer, of the trust receipt, the warehouse receipt, the chattel mortgage, and the conditional-sales contract, for financing the purchase of cars by dealers.

36. BURTON COMPANY

Installment Sales

In 1922 the Burton Company decided to lease some unused space in its department store to a company operating leased departments in various stores. The operating company was to open a phonograph department, which was expected to attract new customers to the Burton Company's store. From its experience in other departments, the management of the Burton Company anticipated that at least 75% of the sales in the phonograph department would be made to persons of moderate means.

The department store of the Burton Company was located on the main shopping thoroughfare of a large city. Installment sales were made only of certain specified articles, such as washing machines, vacuum cleaners, sewing machines, and electrical equipment. In its installment sales, the store had used conditional-sales contracts.

The phonograph department was to sell several kinds of

phonographs and records, with a wide range in price: table models ranging in price from \$25 to \$75, portables from \$8.50 to \$50, upright cabinets from \$100 to \$275, and consoles from \$110 to \$750, with an expected average sale of \$175. Although the prices of records would range from 75 cents to \$5 each, the most popular prices were expected to be 75 cents, \$1.50, and \$2.

The management of the Burton Company expected that the total annual sales of the phonograph department would be about \$100,000, of which 30% to 35% would be sales of records. The store was to make collections for the department and, therefore, had jurisdiction over the question of whether or not phonographs and records should be sold on the installment plan.

For the preceding 25 to 30 years, pianos and sewing machines had been sold by department stores on a deferred-payment basis. This method had been adopted so that persons of moderate means could afford the pleasure or comfort derived from the use of such articles. The credit manager of the Burton Company believed that selling such merchandise on a deferred-payment basis formed a strong selling appeal for these articles and markedly increased their sales. He estimated that 500 sewing machines were sold on part-payment to each one that was sold for cash. People of moderate means had been willing to purchase household machines if they could be obtained without too great an original expenditure. Deferred-payment plans had brought the purchase of these articles within the range of moderate incomes.

Kitchen ranges sometimes had been sold by department stores on the installment plan, but the credit manager of the Burton Company believed that this policy had been less successful in increasing the distribution of kitchen ranges than of pianos and sewing machines. Since the purchasers of ranges usually were property owners, ordinarily they could afford to pay for the ranges at once and, thereby, save the interest charges made on deferred-payment sales. On the other hand, he believed that deferred payments had increased greatly the distribution of automobiles.

Sometimes the companies which sold on an installment basis exploited their customers by charging interest at 6% per year on the total amount of the credit given at the time the sale was made; thus, when part of the total amount had been paid, the customer still was paying 6% a year on the entire amount. The

Burton Company, however, did not follow this practice, but charged interest only on the monthly balance which was owed.

The credit manager of the Burton Company believed that, if it was used intelligently, the deferred-payment plan of purchasing formed a useful budget system for customers. The chief disadvantage in this connection was that a customer might pledge too large a part of his income in this way; consequently, any unexpected expenses might involve him in financial difficulties, because he would not have a surplus for emergencies. Phonographs were primarily a luxury, but the credit manager thought they were an economic advantage, in that they increased people's interest in their own homes by bringing music into those homes. Since a phonograph was a luxury, there was a possibility that the installment system would lead purchasers to buy more expensive machines than they could afford to purchase. For that reason, the credit manager advocated that the Burton Company follow the policy of not promoting installment sales on high-priced machines. This might not seem at first to be a profitable policy for the store, but, in the end, the sale of a moderate-priced machine which was not returned would be more profitable to the store than the sale of a higher-priced machine which later was returned because the customer could not make the payments on it.

According to the suggested plan, the maximum time to be allowed customers for completing payment would be 12 months, and notes were not to be taken in payment. Ten per cent of the regular retail price was to be required as the initial payment; the balance was to be paid in equal monthly installments, with interest on the unpaid balance at the rate of 6% a year, payable $\frac{1}{2}$ of 1% monthly. In computing the interest to be charged, the store would deduct the first payment from the total amount of the sale and would charge the customer no interest for the first 30 days. If a customer purchased merchandise on an open account, the store granted him credit for approximately 30 days, and it wished to give equal terms to all its customers. At the end of the first 30 days, if the second payment was made, it would be deducted from the total then due and interest would be charged on the balance during the next month. This process would be carried out until the total amount was paid. Since the store was able to borrow money from banks at interest rates of

from $4\frac{1}{2}\%$ to 5%, it could meet some of the extra bookkeeping and collection expenses entailed in installment sales by the difference in the amount of interest received and the amount paid.

Questions

1. Should the Burton Company have adopted an installment-sales plan for the phonograph department?
2. If so, should that plan have applied to the high-priced machines? to records?

37. MAZUR WHOLESALE GROCERY COMPANY

Bankruptcy

The Mazur Wholesale Grocery Company operated in the western part of the United States, where it was one of the largest units of its kind in the field. The Kehoe Hotel, which operated in a western summer resort, was a customer of the Mazur Wholesale Grocery Company. On June 19, at the opening of the summer resort season, one of the company's salesmen called upon the Kehoe Hotel and sold an order for \$288.34 worth of groceries, to be paid for in 30 days. The credit department of the Mazur Wholesale Grocery Company authorized delivery of the goods, reporting that the hotel always had paid its bills promptly. The groceries were shipped to the hotel without further investigation at that time.

Since the managements of summer hotels were known to change frequently, however, the Mazur Wholesale Grocery Company undertook an investigation of the Kehoe Hotel after the goods had been shipped. The salesman was instructed to obtain as much information as he could concerning the current credit standing of the Kehoe Hotel. The credit manager obtained a mercantile report on the hotel from Bradstreet's Commercial Agency, which stated that the hotel building and equipment had been sold at the close of the previous resort season, and that the new owner had leased the property for the current season to three men who had formed a partnership for the purpose of operating the hotel. The salesman of the Mazur Wholesale Grocery Company found that the partner who was most active in the management of the hotel had been through bankruptcy twice and had a court record for forging checks. The salesman

was unable to discover any information about the business records of the other two partners.

The credit manager found out that the hotel had bought provisions on credit from several other companies. He decided that the three partners planned to purchase on credit, obtain the receipts from the large summer trade, and go out of business without paying the debts incurred. The Mazur Wholesale Grocery Company decided not to sell the hotel any more provisions except for cash, unless the reliability of the customer was demonstrated, and notified the hotel of this decision.

After the Mazur Wholesale Grocery Company notified the hotel that no further shipments on credit would be made, the hotel telephoned in "rush" credit orders to an aggregate amount of several thousand dollars. The company ignored these orders.

When the 30-day credit period allowed on the first order was up, the credit manager of the Mazur Wholesale Grocery Company telephoned the treasurer of the hotel and asked him to pay the \$288.34 which was due. The treasurer promised to do so within a day or two or to call upon the credit manager. As the treasurer did not keep this promise, the company sent its salesman to the hotel to collect whatever he could on the account. With great difficulty, the salesman obtained \$48 of the amount due. The credit manager believed that the hotel made this payment in order to forestall action on the part of the company so that the partners would have time to escape with the summer's receipts. The week following the salesman's call, the company sent a letter to the hotel notifying it that unless \$120, one-half the amount due, was paid within a week, and the balance of the account within two weeks, the company would take legal action to collect. The hotel did not reply to this letter, and the credit manager prepared to take steps to enforce payment.

The question of the good will of the customer did not enter into the problem because the Mazur Wholesale Grocery Company was convinced that the men who were operating the Kehoe Hotel were dishonest, and undesirable as customers.

Although the Kehoe Hotel had not paid for the groceries, it was the legal owner of them, the title having passed to the hotel at the time of sale. Since this was true, the Mazur Wholesale Grocery Company could not obtain an order of replevin, which would give the company the right to retake

the groceries subject to a possible adverse decision in an action for their possession, without first proving fraud and rescinding the sale in order to recall the title. As the groceries were mostly canned goods, the company, if it recovered them, would be able to resell them without loss; the purchaser could be required to pay all handling and transportation expense necessary to the return. The company, however, might find it difficult to rescind the sale and to obtain the order of replevin. It would be necessary for the company to go to court, show the original order, bill of sale, and statement of the account, and prove that the provisions in the possession of the hotel were those sold by the Mazur Wholesale Grocery Company, and that the Kehoe Hotel had been guilty of fraud. The identity of the groceries could be proved by a comparison of samples of the groceries held by the hotel and the stocks of the Mazur Wholesale Grocery Company, or by evidence that the groceries bore the Mazur brand, but it was impossible to anticipate whether or not fraud could be shown. Since the groceries ordered had been canned goods for current consumption and since telephone orders had been sent in for further supplies, it was probable that a large part of the provisions had been used. If an order of replevin were obtained by the company, it still would have to sue the hotel for the difference between the value of the supplies on hand and the amount of the order. The credit manager decided that it was impracticable to try to rescind the sale.

Another possibility was for the Mazur Wholesale Grocery Company to petition the Kehoe Hotel into bankruptcy. The company might be able to collect more through such action than by an order of replevin. The hotel had obtained at least \$500 worth of groceries from each of two other companies, and some of these groceries probably still were on hand. Moreover, since partners had unlimited liability, all the assets of the partners would be subject to the claims of their creditors. The company did not know what the value of the partners' assets was. The lease on the building and equipment would be of no value in settling the claims. The law required that one of the five acts of bankruptcy be committed before a firm could be declared bankrupt. These acts were as follows:³

³ U. S. Bankruptcy Law of July 1, 1898, as amended. Sec. 3, Acts of Bankruptcy.

Acts of bankruptcy by a person shall consist of his having (1) conveyed, transferred, concealed, or removed, or permitted to be concealed or removed, any part of his property with intent to hinder, delay, or to defraud his creditors; (2) or transferred, while insolvent, any portion of his property to one or more of his creditors with intent to prefer such creditors over his other creditors; or (3) suffered or permitted, while insolvent, any creditor to obtain a preference through legal proceedings, and not having at least five days before a sale or final disposition of any property affected by such preference vacated or discharged such preference; or (4) made a general assignment for the benefit of his creditors, or, being insolvent, applied for a receiver or trustee for his property or because of insolvency a receiver or trustee has been put in charge of his property . . . ; or (5) admitted in writing his inability to pay his debts and his willingness to be adjudged a bankrupt on that ground.

The law also required that the petition for bankruptcy be made by not less than three creditors with aggregate claims of at least \$500. The credit manager believed that bankruptcy proceedings would be too slow, and that before three creditors could agree and the rights to petition be obtained, the partners would be gone with the summer's receipts.

Another alternative was for the company to attach the Kehoe Hotel's bank account and sue for the purchase price of the groceries immediately. The height of the resort season in the locality in which the Kehoe Hotel operated came in the month of August, and the credit manager believed that the hotel probably would have sufficient funds in its bank to pay the account. The company would have to attach the hotel's bank account before giving notice of its intention to sue, or the hotel would withdraw the funds from the bank. Before it could obtain an order of disclosure and attach the account, the company would have to prove fraud, transfer of property, non-residence, or other grounds of attachment. An order of disclosure from the court required the banks to disclose the information as to whether or not the firm in question had a bank account and, if so, the amount of the account. The Mazur Wholesale Grocery Company, if it used this means of collection, would obtain payment in full, provided that the hotel's account was sufficient to meet the claim, that a judgment of the court was obtained, and that the attachment was placed upon the bank account before any of the other creditors had resorted to that measure. If it was

found that the hotel's bank account was sufficient to pay but a small portion of this account, the Mazur Wholesale Grocery Company still could sue the hotel for the entire amount due.

On August 23 a meat wholesaler, a flour-mill company, and another creditor, with total claims amounting to approximately \$1,100, petitioned the hotel into bankruptcy. Total debts owed were about \$2,500 and as far as had been discovered in September, the only tangible assets were about \$100 worth of provisions. The hotel had been closed. The Mazur Wholesale Grocery Company put in its claim for \$240.34 along with the claims of the other creditors. The credit manager stated that he expected to obtain nothing on the claim and that the amount was to be charged to losses from bad debts.

Questions

1. What are the advantages and disadvantages of bankruptcy, for
 - a.* creditors;
 - b.* bankrupts;
 - c.* the business community?
2. Should a business firm rely on legal processes for collecting amounts due it?

CHAPTER XIII

BUSINESS INSURANCE¹

38. MILLER & WHITE COMPANY

Kinds of Insurance for Department Store

Miller & White Company operated a department store in a city of nearly a million in population. The store appealed to those buying on a price basis. It handled low- and medium-grade merchandise. Its sales volume in 1925 amounted to \$6,500,000; the total insurance charges in that year were \$21,400 or 0.33% of net sales. The treasurer of the Miller & White Company had to decide each year what types of insurance he should renew or take out for his company.

The store, which was seven stories high, was located in the conflagration area of the city. It was erected in 1906 and was of first-class (fireproof) construction. There were approximately 200,000 square feet of floor space.

The company was of sufficient financial strength to renew or take out the kinds and the amounts of insurance that the treasurer considered necessary. The balance sheet and income statement for 1925 are given in Exhibit 1.

The treasurer studied the value to his company of the various kinds of insurance; and, in order to get expert advice, he frequently consulted with Mr. Dana, the manager of the Hartwell Insurance Company. The treasurer, Mr. White, gave all the insurance for his company to the Hartwell Insurance Company, a course which he considered wise because then the insurer would take especial interest in the assured and would give careful attention to the particular needs of the store.² When the time came for renewals in 1926, Mr. White gave particular attention to use

¹ DUTTON, pp. 276-303.

² There were at least several dozen types of insurance which the Miller & White Company could buy. In an insurance bulletin published by the Controllers' Congress of the National Retail Dry Goods Association, Vol. 5,

EXHIBIT 1

MILLER & WHITE COMPANY

A. BALANCE SHEET, JAN. 1, 1926

(000 omitted)

Assets

Land and Buildings.....	\$2,370
Fixtures and Equipment.....	125
Delivery Equipment	20
Cash	137
Accounts Receivable	509
Merchandise Inventories	674
Insurance Deposits and Cash-surrender Values.....	45
Claims and Personal Accounts Receivable.....	9
Unexpired Insurance Premiums.....	22
Supply Inventories	22
Prepaid Life Insurance.....	23
Other Deferred Charges.....	33
	<hr/>
	\$3,989

Liabilities

Capital Stock Common.....	\$ 400
Capital Stock Preferred.....	1,000
Surplus	325
Mortgage	1,575
Accounts Payable	570
Other Current Liabilities.....	19
Accrued Liabilities	46
Reserves	54
	<hr/>
	\$3,989

B. INCOME STATEMENT, JAN. 1, 1926

(000 omitted)

Sales	\$9,333
Cost of Sales.....	6,066
	<hr/>
Gross Income	\$3,267
Operating Expenses	3,127
	<hr/>
Operating Profit	\$ 140
Other Charges	10
	<hr/>
Net Profit	\$ 130

and occupancy insurance, public liability insurance, and fire insurance.

Use and Occupancy Insurance.—Use and occupancy insurance—better known as business-interruption indemnity—can be obtained to protect the assured against almost any contingency which would cause an interruption of business. The most common form is use and occupancy insurance against fire, which protects the assured against certain losses caused by fire that are not covered under the straight fire-insurance policy.³

No. 1, there were listed 43 kinds of insurance, which were as given below. Miller & White Company during the previous year had carried the first 22 kinds.

Fire	Leasehold Interest
Rent	Stock in Delivery
Profits	Marine
Use and Occupancy, Profits	Riot
Transit	Explosion
Parcel Post	Tornado
Earthquake	Hail
Sprinkler Leakage	Rain
Plate Glass	Water Damage
Automobile Fire	Automobile Collision
Automobile Liability	Teams Property Damage
Automobile Property Damage	Use and Occupancy, Boiler Explosion
Steam Boiler	Fly Wheel
General Liability	Break Down of Electrical Motors
Elevator Liability	Use and Occupancy, Elevator Stoppage
Compensation	Contingent Liability
Partnership Life Insurance	Chiroprapist
Messenger Robbery	Employee's Life Insurance
Safe Burglary	Group Disability
Check Alteration and Forgery	Merchandise Burglary
Fidelity Bonds	Fur-storage Theft
Office Robbery	

³ As explained in the same bulletin mentioned in the preceding footnote:

“The intent of use and occupancy insurance is to cover loss of net profits growing out of the interruption of business; it covers also the obligations represented by certain fixed charges and expenses which must necessarily continue, such as taxes, salaries to permanent staff, interest on borrowed capital, mortgages and other forms of indebtedness, insurance premiums, advertising, royalties not based on production, other yearly contracts necessary to the maintenance of the property, cost of lighting, heating and similar maintenance consistent with the condition of idleness, and all other items of overhead expense which would need to be continued during an idle period.”

In the spring of 1926, Mr. Dana of the Hartwell Insurance Company advised Mr. White to renew his use and occupancy policy. He claimed that a store could not afford to be without use and occupancy insurance, for losses from interruption of business were frequently more serious than fire losses.

Mr. White agreed that business interruption indemnity was advisable, because the loss above the material destruction could be covered at least in part by use and occupancy insurance. In addition, he realized that it was important for a department store to resume business quickly after an interruption; the indemnity from this insurance facilitated resumption by enabling a company to hold much of its organization intact.

The rates for use and occupancy insurance were based on the area of the store, the time estimated to rebuild the structure, the time estimated to replace fixtures and merchandise, and the net profits of the insured. For this store the yearly rate was \$1.50 per \$1,000 worth of protection. If a three-year policy was taken out, it was sold at two and one-half times the yearly rate.

General Liability Insurance.—General liability insurance insures property owners and those in charge of property against loss from liability for damage on account of bodily injuries or death caused by reason of the maintenance and operation of the premises. Employees had to be protected by a special policy because there was a state workmen's compensation law. With its general liability insurance, the Hartwell Insurance Company offered a service which consisted of periodic reports to the policyholders upon the condition of the premises, and of recommendations for the betterment of the premises.

Mr. Dana thought that Miller & White Company should be fully protected from liability for claims and for lawsuits by persons injured in the store, chiefly because the contingent liability was large but also because it improved credit relations with banks.

Mr. White was convinced that his company could not afford to operate without some general liability insurance. Lawsuits and claims were frequent, because there was a certain class of people who would sue for damages on the slightest provocation. To be insured against such contingent liabilities, Mr. White considered a "relief of mind," as well as a sound business practice. The general liability policy which the company had

in force in 1925 insured the company against claims from any one person up to \$10,000 and from more than one person in the same accident, up to \$20,000.

The general liability rates were based on location as to city, class of building, and area and frontage of building. The yearly rate for the company was 27 cents per 100 square feet of floor space and 15 cents per running foot of frontage. A 10% discount was offered on a three-year policy.

Fire Insurance.—The question regarding fire insurance was what percentage of the sound value of the building should be covered. By sound value was meant the present cost of building, less depreciation. Miller & White Company had its building insured up to 80% of its sound value, in accordance with the 80% coinsurance clause.

Nearly all policies were being written with a coinsurance clause, the most common of which was the 80% clause. This clause provided that, in order to collect the full amount of a loss, the insurance must equal at least 80% of the sound value of the property at the time of the loss. If the loss exceeded 80%, however, the assured must stand the loss above that percentage unless more insurance was carried. If the loss was not more than 80%, the insurance company would pay for all damages. For instance, if the sound value of a building was \$100,000 and it was insured for \$80,000 as required by the 80% clause, and if the loss was \$60,000, the insurance company would pay \$60,000.

If, on the other hand, the same building was insured for \$60,000 and should have been insured for \$80,000 under the 80% clause, and if the loss was \$60,000, the insurance company would pay only \$45,000, or six-eighths of the loss. The reason for paying only six-eighths of the loss was that, under the 80% clause, the assured should take out a policy for \$80,000 when the sound value was \$100,000; but if the policy was written for \$60,000 instead of \$80,000, the insurance company obligated itself to pay no more than a percentage of the loss equal to the ratio between the actual amount of the policy and 80% of the sound value of the property. The same principle applied to all coinsurance clauses.

Mr. White agreed that his building should be protected by taking out insurance at least equal to 80% of its value, in compliance with the 80% clause, not only to maintain a satisfactory

credit position with the banks, but also to protect the stockholders.

But since the building was over 20 years old, Mr. Dana believed that, in order to minimize the loss if the building had to be replaced, it should be insured up to its full sound value instead of 80%. Mr. Dana illustrated the large contingent liability when the building was insured for but 80% of its sound value.

Building Replacement Value (Miller & White Company)	\$1,959,000
Less Exclusions	66,000
	<hr/>
	\$1,893,000
Less Depreciation 12½%	238,000
	<hr/>
Sound Value	\$1,661,000
In case of Total Destruction, indemnity by Complying with 80% Clause	1,329,000
	<hr/>
Loss From Sound Value	\$ 332,000
Plus Amount Necessary to Equal Replacement Value (same as depreciation above)	238,000
	<hr/>
Amount Required above Indemnity to Replace Building	\$ 570,000

Mr. Dana did not think that Miller & White Company should have the contingent liability of \$570,000 necessary to replace the building in case of total destruction. The indemnity under 100% insurance would be \$1,661,000. Mr. Dana also recommended fire insurance on the contents of the building. He advised insurance up to 90% of insurable value; for policies on contents were written by his company customarily under a 90% coinsurance clause, thus affording more complete protection.

The fire rates were based on construction, fire protection, care and management of store, and exposure. The yearly rates offered to Miller & White Company were \$1.50 per \$1,000 on the building and \$4.50 per \$1,000 on the contents. If a three-year policy was taken out, it was sold at a price two and one-half times the annual rate.

Questions

1. Describe the principal insurance needs of the Miller & White Company department store.

2. What policies should the treasurer renew or take out for the company? Why?

3. What should be the approximate amounts of the use and occupancy and the fire-insurance policies?

39. MANKATO CLOTHING COMPANY

Insurance Against Loss from Bad Debts

The Mankato Clothing Company, located in New York City, manufactured men's overcoats and suits. Most of its sales of approximately \$750,000 were made directly to about 500 retail clothing stores scattered throughout the United States. A few sales were made to clothing wholesalers. The company investigated the financial integrity of its customers carefully, and, during the six-year period previous to 1920, its losses from bad debts had been less than 0.2 of 1% of sales. In 1920 and 1921, although greater care was exercised in granting credit, losses from bad debts more than doubled, amounting to \$2,157 and \$2,369, respectively. The executives of the company recognized that these were years of serious business depression. In 1922 the loss from bad debts amounted to only \$400, which was abnormally low; in 1923, however, the figure rose to \$2,409, the highest loss the company had experienced. This led the company to investigate different methods of shifting credit risk.

The company employed seven salesmen who operated out of New York, Chicago, Boston, Duluth, and Los Angeles. In 1923, the company was making an effort to secure additional salesmen to cover more adequately the Pacific Northwest and the South. It looked for men with sufficient financial backing to pay their own expenses, since their only remuneration was 6% commission on net sales.

Sales were made to customers of various degrees of financial standing. Salesmen were instructed to accept orders only from retailers whom they believed, from personal inquiry and observation, to be financially capable. Salesmen were so interested in making sales, however, that their recommendations for credit were of little value, and all accounts had to be scrutinized at the home office. If the company had had no previous experience with a customer, several methods of checking were employed. A customer's ratings in Bradstreet's and Dun's were examined,

and if his order was larger than his ratings justified, a special report from each agency was obtained.

The Mankato Clothing Company was a member of the National Association of Clothiers' Credit Bureau, from which could be learned, on application, names of member companies which previously had sold to the customer. Letters were written to a number of these companies requesting information concerning their experience with the customer. The company stated that a failure to receive a reply from these requests was unusual. The amount of credit that the Mankato Clothing Company granted depended upon the information received from this checking. If an order larger than appeared safe was received from a customer, only part of the order was shipped, and the remainder held until payment had been received on the first shipment.

The company estimated that about three-fifths of its customers were rated in Bradstreet's⁴ as having credit which entitled them to grades *C* or *D*. One-fifth would fall in *A* and *B* grades, and one-fifth in grades *C*, *D*, and *E*. Without actual computation, the manager believed that the ratio of losses to sales in each group was about the same, except that it was somewhat larger for grades *C*, *D*, and *E*. Seventy-five per cent of

⁴ Bradstreet's ratings were classified according to estimated wealth and credit standing. The insurance company made a further classification and divided the ratings into starred and unstarred groups.

Estimated Wealth			Grades of Credit		
.....	\$1,000,000 and above	}	<i>AA</i>	<i>A</i>	<i>B *</i>
.....	500,000 to \$1,000,000				
.....	400,000 to 500,000	}	<i>AA</i>	<i>B</i>	<i>C *</i>
.....	300,000 to 400,000				
.....	250,000 to 300,000				
.....	200,000 to 250,000				
.....	150,000 to 200,000	}	<i>B</i>	<i>C</i>	<i>D *</i>
.....	100,000 to 150,000				
.....	75,000 to 100,000				
.....	50,000 to 75,000				
.....	35,000 to 50,000	}	<i>C</i>	<i>D</i>	<i>E *</i>
.....	20,000 to 35,000				
.....	10,000 to 20,000				
.....	5,000 to 10,000				
.....	3,000 to 5,000	}	<i>D</i>	<i>E *</i>	<i>F *</i>
.....	1,000 to 2,000				
.....	500 to 1,000		<i>E *</i>	<i>F *</i>	

* The coverage limit set by the insurance company was lower in the case of the starred groups than in the case of the unstarred groups.

total sales consisted of overcoats, which sold to retailers at prices ranging from \$18.50 to \$50. Most of the overcoat sales were concentrated on costs ranging from \$26 to \$33.50.

The terms of sale that the company had printed on its order blanks were "2% 10 days, net 30 days," but often the company allowed "net 60 days," and sometimes a 2% discount on 30 days. In order to sell overcoats in spring and summer, bills often were not dated until fall, even though the goods were shipped on receipt of orders. In some cases, instead of a future dating, extension of time of payment was allowed, but this never had exceeded 8 months net. Customers seldom took advantage of the 2% 10-day discount, and average bills were 40 days net.

Accounts receivable for the previous few years varied from about \$65,000 on May 1, with \$5,000 past due, to about \$200,000 on November 1, with \$15,000 past due. Notes receivable were seldom taken. Past due accounts varied according to the selling season retailers had experienced. When an account became overdue, the company wrote a series of letters to the customer, requesting payment. If these did not bring results, a sight draft⁵ was sent, and if this proved unavailing, the account was turned over to an attorney for collection.

The company, in 1923, investigated credit insurance companies and policies. There were four companies in the United States writing credit insurance, two of which were branches of reliable English companies. The other two were American companies. The English branches had the wide experience of their companies' businesses in many countries. One of the English branches was selected which, in the opinion of the Mankato Clothing Company, wrote the more liberal policy.

The insurance company guaranteed against abnormal loss on accounts receivable, caused by the insolvency⁶ of debtors.

⁵ A sight draft is an order drawn by the seller of a bill of goods upon the purchaser or upon the purchaser's bank, for the immediate payment of the seller's invoice. If honored by the purchaser or by the purchaser's bank, the sight draft takes on the characteristics of a check payable to the seller who drew the draft.

⁶ The insurance company defined insolvency as follows:

"Insolvency Defined."—The insolvency of a debtor for the purposes of this Policy shall be deemed to have occurred:

(1) When the Insured files with the Company for collection, but not

The "normal" loss was determined by the insurance company after considering the particular company in the light of such factors as the losses of the company during the previous five years, the credit standing of its customers, the terms of sale, and the experience of companies under similar conditions. The insurer calculated the Mankato Clothing Company's normal loss at 877/1,000 of 1% of gross sales. Furthermore, the clothing company had to stand all losses up to \$5,261, before insurance would become of value. The fact that in no year had the company reached one-half of this normal loss was one of the chief reasons against taking out credit insurance.

Credit insurance policies were made out with a maximum which the insurance company could be called upon to pay in any one year. The insurance company suggested for the Mankato Clothing Company a maximum of \$47,630, which represented one-quarter of the amount of accounts receivable usually outstanding on November 1. For this amount of insurance for the Mankato Clothing Company, the annual premium, payable in advance, was set at \$1,096 on a sales estimate of \$750,000; if

later than the last day permitted for filing accounts under this Policy, an account which is due and payable at the time of filing;

(2) When a petition in bankruptcy or insolvency is filed by or against a debtor under the laws of the United States, or any State or Territory thereof, or of Canada;

(3) When a debtor makes an offer of a general compromise to his creditors for less than his indebtedness;

(4) When a receiver is appointed for a debtor;

(5) When a sole debtor dies or becomes insane;

(6) When there is the recording of or taking possession under a chattel mortgage given by a debtor on his stock-in-trade to a creditor or creditors;

(7) When an attachment or execution is levied on a debtor's stock-in-trade;

(8) When a writ of execution against a debtor is returned unsatisfied;

(9) When a debtor transfers or sells out his stock-in-trade in bulk;

(10) When a debtor absconds;

(11) When a debtor makes an assignment, or a deed of trust, for the benefit of his creditors, either general or with preferences;

(12) When the stock-in-trade of a debtor is sold under a writ of attachment or execution;

(13) When a confession of judgment is made by a debtor;

(14) When a debtor's business is assigned to or taken over by a Committee appointed by a majority in number and amount of his creditors.

sales were above or below this figure, the rate would be adjusted accordingly.

The first provision under "coverage" of the policy was that the insurer was not liable for any loss on a debtor's account unless his name and credit rating appeared in the latest book of Bradstreet's Mercantile Agency. The second provision was that the limit for which the insurance company was liable varied with the rating of the debtor. The largest amount was \$10,000, for a debtor with an AA rating. For the other companies with unstarred ratings,⁷ the coverage limit was lower, with \$2,000 the average. For individual debtors with starred ratings, the limit varied between \$250 and \$1,000, but the total liability of the insurer for losses from accounts with those ratings was not to exceed \$4,000. The Mankato Clothing Company had no accurate knowledge of the number of its accounts with balances larger than the coverage limits, but it was estimated that, usually in the fall, about 20% were above them.

The coverage limits were reduced by the coinsurance clause, which required the clothing company to stand 10% of any losses from debts of companies that Bradstreet's graded as unstarred, and 33⅓% of any losses from companies that had a starred rating. The insurance company stated that this coinsurance clause was inserted to reduce the moral hazard. Mankato Clothing Company recognized the high normal loss, the low maximum limit, the high cost, the exacting coverage limits and the coinsurance requirements, and weighed these limitations and disadvantages of credit insurance against the advantages.

The most evident advantage was that it provided a means to meet unexpected losses, and so relieved the executives from worry about the effect of adverse business conditions on customers' solvency. The company believed further that credit insurance would give definite value to its book accounts under all business conditions, and that it would strengthen its borrowing ability at the banks during a period of fluctuating business conditions.

The policy provided that it was optional with the insured company whether or not the past due accounts should be placed with the insurance company for collection. Any account 70

⁷ See footnote 4, p. 214.

days past due, however, had to be placed with the insurance company if it was to be a credit against the company. Collection service was performed by the insurer at a cost ranging from 2 to 15% of the amount of the bill. The Mankato Clothing Company considered it advisable to attempt to collect accounts itself, within the 70-day option period. This collection service could be done with little expense to the company, by means of letters, and it was believed that it would hold customers better. The company had no desire to continue to sell to customers whose accounts were 70 days past due, however, and it believed that the collection department of an insurance company could recover larger amounts because of its experience and trained staff.

Questions

1. Should the Mankato Clothing Company have taken out the suggested insurance against losses from bad debts?
2. What are the factors which should determine whether or not credit insurance is advisable?
3. In what fields of business would you think credit insurance especially necessary?

40. LANGLEY COMPANY

Industrial Insurance

The Langley Company, which carried on business in an important Massachusetts city and its suburbs, used over 150 trucks and wagons to deliver merchandise to its customers. The drivers and their helpers had to carry heavy loads, and the risks of personal injury were large. It was necessary to pay high accident liability-insurance rates in spite of the fact that all possible safety precautions were used. In July, 1912, a workmen's compensation law went into effect in Massachusetts. The question, therefore, arose how the Langley Company should carry the additional burden imposed by this legislation.

The Massachusetts workmen's compensation law covered all private employments in the usual course of an employer's business, except masters or seamen on vessels in foreign or interstate commerce. It covered personal injuries arising out of, and in the course of, employment, unless due to serious and willful

misconduct. "Injury" was construed to include occupational diseases. The maximum compensation for total disability, partial disability, or death was \$4,000. If an accident was attributable to willful misconduct on the part of the employer, the compensation was doubled. Insurers under the law had to provide reasonable and adequate medical aid.

Employers who elected to follow the recommendations in the act had to take out compensation insurance with authorized insurance companies. Although the act did not compel employers to insure, Sec. 66 provided that:

In an action to recover damages for personal injury sustained by an employee in the course of his employment, or for death resulting from personal injury so sustained, it shall not be a defense:

1. That the employee was negligent;
2. That the injury was caused by the negligence of a fellow-employee;
3. That the employee had assumed the risk of the injury.

Section 67 provided that:

The preceding section shall not apply to actions to recover damages for personal injuries sustained by domestic servants and farm laborers, nor to actions for such injuries received by employees of an insured person.

This provision was inserted to induce employers to take out insurance. Approximately 91% of the Massachusetts employers were insured under the act in 1924.

Prior to the passage of this statute, a workman injured in the performance of work could bring suit against the employer to recover an amount proportionate to the injury suffered. Unless the employer could prove one of the three defenses listed above, he usually was forced to pay to the workman whatever amount the jury found to be a fair measure of the injury. The new law gave the employer two alternatives: to insure his company's risk with a recognized insurance company, or not to accept the compensation features of the act. If the latter policy were followed, however, the employer forfeited his right to the common law defenses of contributory negligence, fellow-servants' fault, and assumption of risks, unless the employee on being hired elected not to accept the benefits of the Work-

men's Compensation Act, when the employer's common-law defenses remained intact.

The chief advantage of insuring with an authorized insurance company was that all liabilities of the company under the act were covered fully. There was no possibility that an award by a sympathetic jury might cause a loss to the company. An insurance company, because of its diversified risks, could stand the loss of a series of accidents better than any single company.

The insurance companies maintained that to insure with them was to increase the good will of the employees toward the employer, because any claims for compensation would be brought against the insurance company, and if any disagreement occurred, there would be no ill feeling between the employee and employer. No charge of intimidation, furthermore, such as threat of discharge, could be brought against an employer who insured his risk with an insurance company. For a period of years, however, the manager of the Langley Company had built up a spirit of good will and cooperation in his organization. He maintained that this would be preserved more successfully if compensation were adjusted within the company.

The manager believed that the loss to his company from actual payments of compensation would not be so great as the premiums required by insurance companies. The Langley Company did safety work among its employees which reduced its percentage of accidents below the average of all companies in the same class on which the insurance companies computed their premiums.

A firm of lawyers who specialized in cases arising under the Workmen's Compensation Act could be retained for a reasonable annual fee. Special attorneys would go to the injured employee as soon after the accident occurred as possible, and persuade him to sign a release. In return for this release the company guaranteed to pay the employee his regular weekly wages until he was able to work again. If the injury were serious, the lawyers attempted to make a fair settlement out of court. Under such an arrangement it was possible that someone not connected with the company might persuade an employee to demand his rights under the common law and sue the company for a large sum of money. The manager, however, thought that the good will of the employees toward the company, the

prospect of regular weekly wages without any waiting period, and the payment of doctor's bills during a period of incapacity would be sufficient to influence an employee to accept the company's offer. The manager recognized, however, that from time to time cases would arise which would go to court, and awards for excessive amounts might be granted to employees. As a result of experience he did not expect this to occur oftener than once in three or four years. The manager estimated that the cost of non-acceptance of the benefits offered in the workmen's compensation law over a period of years would be less than the premiums of any insurance company for the same period.

The manager of the company expected that after the law had been in effect a few years, the amounts awarded by the state board of administration for injuries would increase, and that the waiting period before compensation payments began would decrease. Then the insurance rates would increase to cover these changes.

Questions

1. Should the company take out liability insurance with a recognized insurance company to cover injuries received by employees while at work, or should the company have put trust in its ability to prevent accidents and to handle by itself matters of compensation arising from them?

PART IV
INDUSTRIAL MANAGEMENT

CHAPTER XIV

LOCATION AND LINE OF PRODUCTS¹

41. WALWORTH MANUFACTURING COMPANY

Location of a Factory

The Walworth Manufacturing Company, located in Boston, Massachusetts, was engaged in the manufacture of iron pipe, pipe fittings, and tools. The increasing market for the products of the company made it advisable, in 1916, to expand production facilities. Before taking steps in that direction, however, the management of the company formulated a general policy to guide its expansion. The policy adopted was to produce a line of pipe, pipe fittings, and tools in factories located in the areas of lowest production cost and located conveniently with relation to markets. In addition, the policy provided for the establishment of the company's own wholesale distribution units located strategically throughout the United States. These decisions were based, in large measure, on the successful experience of a leading competitor. The importance of transportation costs in the iron products industry made the adoption of a policy of decentralized production and wholesale distribution essential.

The points of policy having been decided, the accomplishment of the expansion involved the consideration of relative costs and factual matters. These included, in the case of production units, the costs of construction, of power, and of machinery and equipment, availability and cost of raw materials, climatic conditions, attractiveness of surroundings, transportation facilities, distance from the factory to distributing warehouses, and, in connection with labor, its supply and kind, wage scales, and housing facilities.

There were three recognized centers of low-cost iron and

¹ DUTTON, pp. 320-336; JONES, 44-66; MARSHALL, 28-50.

iron-product production in the United States: Chicago, Ill.; Birmingham, Ala.; and Pittsburgh, Pa. In addition, California was regarded with favor as a place in which to have a production unit, because of the large market for pipe and pipe fittings in the petroleum industry there. To secure advantageously low production costs, the Walworth Manufacturing Company wished to have a factory in each of these four areas, in addition to its plant in Boston.

The products of the company were of three general kinds, classified upon the basis of the character of the manufacturing process: one class consisted of heavy cast-iron and malleable iron pipe and pipe fittings, another of brass products, and another of tools and small iron fittings. Upon the first class, freight costs amounted to from 10 to 15% of the sales value; on the second class, from 3 to 5%; and on the tools, 2%. The Boston plant could not compete with inland producers, except in the northeastern markets, in the production of heavy articles and brass products. Heavy pipe and pipe fittings had to be produced in the districts of lowest cost, and as near as possible to the principal markets. The matter of prompt delivery service was important in the case of these products, as frequently a customer would need a repair part, until the arrival of which his operations would be interrupted. In order to obtain the proper raw materials for the manufacture of brass products, it was necessary to be near some large industrial center making similar products.

In 1916, a favorable opportunity was presented to buy a production unit at Kewanee, Ill. It was situated advantageously for the manufacture of brass products, and was equipped to make the heavy and semi-heavy lines of pipe and pipe fittings. Although for the iron products the costs of labor and iron, and the freight charges to some parts of the market to be served were higher in the Kewanee section than in some others, the purchase was made because the price of the plant clearly was advantageous. The Kewanee unit was to supplement the Boston factory by serving the inland territory and the Pacific Coast.

By 1922, however, competing plants located in and near Birmingham, Ala., were providing forceful competition by quoting low prices. Those plants had lower production costs in the manufacture of heavy pipe and pipe fittings than did the

Walworth Manufacturing Company. This situation precipitated the decision of the management of the company to continue with the accomplishment of its expansion policy, by buying or building a plant in the Birmingham territory. Thus the company might be enabled to render service, to quote prices equal to those of competitors, and to serve adequately the important markets of the Texas oil fields and Cuba. Although competition was becoming more and more keen, haste was not regarded by the company as an essential element in the problem. No great difficulty was anticipated in financing any project which might be undertaken.

A study was made to determine the most favorable town or city in the Birmingham district in which to locate a Walworth plant. The plant would need ample supplies of pig iron, soft coal, coke, molding and core sand, power for manufacturing, and workmen. Among several places considered were the following: Chattanooga, Tenn., and Birmingham and Gadsden, Ala. A brief outline of pertinent factors about each town or city was presented to the president of the Walworth Manufacturing Company as follows:

Chattanooga was served by six railroads and was located on the Tennessee River, which was used for barge transportation. It was expected that the river would be navigable for standard barges when the Muscle Shoal hydroelectric development was completed about 1925. A belt railway connected all entering roads and all industrial sections. Switching charges were low. The minimum weight on which a carload freight rate could be obtained was 10,000 pounds a car. In other parts of the country the minimum weight was as high as 24,000 pounds a car. Industry in Chattanooga was widely diversified. No one industry or establishment dominated the district. There were 10 banks. The street-railway system furnished adequate service for Chattanooga and outlying towns. Electric power was provided by a hydroelectric plant on the Tennessee River at low rates and with excellent service. All local foundries except one melted Birmingham pig iron. Scrap iron could be obtained locally in quantity. Coke produced in a local by-product plant was not of high quality. The foundries used Birmingham coke. Local molding sand was believed to be satisfactory. Core sand was brought from Kentucky. Coal was produced near by and usually sold below

Birmingham prices. Local soft coal was quoted at \$2.60 a ton delivered, against \$3.50 on Birmingham coal.

Laborers in Chattanooga were almost all American-born; about 60% were white and 40% negro. The total population was approximately 85,000. Hours of work ranged from 48 to 60 a week, with a prevailing average of 50 hours. Of 28 foundries, there were only 2 in which the employees were unionized. Wage rates were set on a task basis, and each workman stopped work whenever he completed the daily tasks assigned him. Labor rates based on a 60-hour week were approximately as follows:

Class of labor	Wage per hour	
	Minimum	Maximum
General laborers (negro).....	\$0.20	\$0.25
Core makers and helpers.....	0.40	0.45
Pourers.....	0.25	0.30
Grinders.....	0.25	0.30
Inspectors.....	0.30	0.32
Cupola workers.....	0.20	0.25
Molders (white).....	0.45	0.55
Molders (negro).....	0.40	0.45

In Chattanooga there were available the four plant sites indicated below. In the first two locations, housing developments, which probably would be undertaken by realty operators, would be necessary. No offer of a free site was made.

1. Acreage adjacent to the Belt Line in Moccasin Bend (near Chattanooga) for a maximum of \$1,000 per acre;
2. Acreage south of the city for a maximum of \$1,000 per acre;
3. Property just outside the city limits on Ship Avenue, available at \$1,500 per acre;
4. The property of the Southern Machine Company on E. 23rd Street containing about 16 acres which could be bought from 3 owners at approximately \$67,000.

Birmingham was served by 10 railroads. Railroads and factories were interconnected by a belt railway. The Warrior

River, about 25 miles west of Birmingham, furnished water transportation by barge line to Mobile and New Orleans. It was expected that a canal would be completed within 5 years to provide barge service to Port Arthur, Galveston, and Houston, Tex. Freight rates via barge were 20% below all rail rates. There was small diversification of industry in Birmingham. The industrial situation was completely dominated by the operations of four important steel and iron companies. There were 11 banks. Birmingham was served efficiently by a street-car system. Electric power was furnished from a hydroelectric plant; rates were low and service uniformly good. Pig iron was produced locally in great quantities from local ore, local coke, and local limestone. Coal was produced locally; many mines were operated with convict labor. Birmingham ore and coal were of low grade. Coke of good quality was produced locally by several large plants. Molding sand was found within 50 miles of Birmingham.

The population of greater Birmingham was about 200,000—57% native white and 39% negro. The small percentage of foreign-born labor was not regarded as efficient. The 54-hour week predominated in the foundries of this district. Wages in Birmingham were about as follows:

Class of labor	Wage per hour	
	Minimum	Maximum
General laborers (negro).....	\$0.27	\$0.32
Core makers (negro).....	0.45	0.50
Pourers (negro).....	0.30	0.35
Grinders (negro).....	0.30	0.35
Inspectors (white).....	0.35	0.40
Cupola workers (negro).....	0.25	0.30
Molders (white).....	0.50	0.60
Molders (negro).....	0.45	0.55

About 1920, a strike of foundry workers, led by the molders, occurred. The walkout was practically complete and lasted for several weeks. In 1923, however, all shops were operated as open

shops; that is, they employed both union and non-union workmen.

There were four available sites for a plant:

1. 12¾ acres at \$1,750 an acre
2. 10 acres at 1,500 an acre
3. 10 acres at 1,500 an acre
4. 24 acres at 1,000 an acre

Gadsden, Ala., was served by five railroads. Although its industry was considerably diversified, it was said to produce more cast-iron soil pipe and fittings than did any other city in the United States. There were four banks. A trolley system connected the business and residential sections of the city and also the neighboring cities of Alabama City and Attala. Electric power was furnished from hydroelectric developments. Rates were low and service excellent. In general, all foundries melted Birmingham pig iron. The Alabama Company operated two blast furnaces at Gadsden but sold the iron locally at Birmingham prices. Scrap iron could be obtained locally but was not worth using in place of pig iron. All foundries used Birmingham coke. All varieties of sand were to be found locally, as was also coke.

The labor supply was almost entirely American-born, only 2% being foreign-born; 32% were negro. The population was approximately 15,000. Adjoining Gadsden were Alabama City, with a population of 6,000, and Attala, with 3,500. The standard work week in all industries was 60 hours. Gadsden as a whole was in favor of open shops and discouraged the location there of industries that followed other employment policies. Labor rates were below those of any other place studied by the company. White molders earned \$25 to \$30 a week for 60 hours and negro laborers \$2 a day of 10 hours. Acreage was available on all sides of the city and also within the city itself. The city's policy was to offer free sites to any desirable industry. Consequently, the Walworth Manufacturing Company made no investigation of property values.

The company had made a rough estimate that it would cost approximately \$500,000 to \$750,000 to build a plant in any one of these possible locations. Little of the company's product would be delivered in the town or city where it was manufactured.

Questions

1. Which city would you have selected?
2. Would you expect the company to confine operations in the new plant chiefly to iron pipes and fittings or to manufacture tools there also?

42. MOTH AIRCRAFT CORPORATION

Scope of Manufacturing Operations

In March, 1929, the Moth Aircraft Corporation, an airplane manufacturing company located in Lowell, Mass., decided to lease the rights to manufacture an engine known as the Gipsy, rather than to manufacture these engines in its own factory. The company was undecided, however, whether to regard the leasing of the manufacturing rights on the Gipsy engine as a long-time policy, or whether it should plan to manufacture this motor in its own factory at some future time.

The Moth Aircraft Corporation was incorporated in the fall of 1928 to acquire from the De Havilland Aircraft Company, Ltd., of England, the rights to manufacture and sell Moth airplanes and Gipsy engines in the United States. Under the licensing agreement, the Moth Aircraft Corporation was permitted to use the designs and patents which the De Havilland Aircraft Company, Ltd., had incorporated in the manufacture of the Moth airplane and Gipsy engine. The Moth Aircraft Corporation was also to be permitted to use any patents or improvements in design which were developed in the future for this airplane and engine by the large engineering staff of the English company. In return, the Moth Aircraft Corporation was reported to have contracted to pay a royalty estimated at between \$50 and \$150 on each airplane manufactured, and a similar amount on each engine produced.

The Moth airplane was of the biplane open-cockpit type and carried two persons. Equipped with a Gipsy engine, it attained a cruising speed of 100 miles per hour. The retail price of the Moth airplane with Gipsy engine was \$4,500. Slotted wings were provided at an extra cost of \$240. The slotted wing was a safety device patented by the Handley-Page Airplane Company, Ltd., of England, and was used under a licens-

ing agreement by the Moth Aircraft Corporation. In March, 1929, there was no other commercial airplane being built in the United States that was equipped with slotted wings.

The Moth airplane had proven successful in foreign countries and was favorably known for its excellent flying qualities and for the record flights it had achieved. It was widely used in England and Canada as a training plane and by individuals who desired a small airplane for sport use. The best flying performance was obtained by using the Gipsy engine in the Moth airplane, and the management did not expect to sell any planes powered with other than this engine.

The Gipsy engine was a four-in-line air-cooled type which developed 85 horsepower at normal speed of 1,900 r.p.m. and 100 horsepower at 2,100 r.p.m. Its outstanding merits were its dependability, and the simplicity of its design which made it well adapted to mass methods of production. It was also economical to operate, since the cost of gasoline and oil consumed was approximately 7 cents per mile. The four-in-line construction of the cylinders in this engine materially lowered head resistance as compared with radial engines of similar horsepower. Although by March, 1929, no Gipsy engines had been manufactured in the United States, it was expected that when produced the retail price would be approximately \$1,500, which was substantially lower than the price of Gipsy engines imported from England. The import duty on airplane engines was 30% *ad valorem*.

In December, 1928, the Moth Aircraft Corporation leased a factory located on the outskirts of Lowell, Mass., and began preparations to manufacture the Moth airplane. Parts for 25 airplanes were in production by March, 1929, and the company estimated that by June production would be at the rate of 6 per week. The total output for 1929 was estimated at 200 airplanes. The company hoped to double this production figure by the end of 1930, and to increase production still further in 1931.

The Moth Aircraft Corporation decided to locate at Lowell primarily because a suitable factory building could be leased which adjoined the Lowell airport. The use of a flying field was important, since every airplane was flown and thoroughly tested after leaving the factory. The building on which the Moth Aircraft Corporation had obtained a long-term lease was

of one-story, slow-burning mill type of construction, and contained a floor space of approximately 100,000 square feet, or an area sufficiently large for a maximum annual production of over 1,200 airplanes.

A floating supply of skilled labor in Lowell was a second important consideration for locating the Moth Aircraft Corporation in that city. Not only was labor of the desired quality available at that time, but it might be obtained at a relatively low price and without bidding against other industries in that territory, since many were unemployed as a result of the closing of several textile and machine factories. According to an estimate made by the company, the prevailing level of wages in Lowell would save more than \$150 in labor costs on each airplane, as compared with wage rates in another city in Massachusetts which had been under consideration as a location for the factory.

More than 1,400 hours of labor went into the production of each Moth airplane produced in England. Machines were used to a greater extent in the production of the Moth airplane in the United States, however, and the Moth Aircraft Corporation estimated that labor hours could be reduced to 1,200 per airplane on a production schedule of 6 per week.

The manufacturing processes were divided into four main groups: woodworking, metal working, covering and doping, and assembly. Part of the woodworking processes consisted of operating simple machinery with the aid of patterns, and could be accomplished by semiskilled labor. The fashioning and assembly of small wooden parts such as ribs and trusses, however, required woodworkers of the highest skill.

The metal-working processes also required two types of labor. The manufacture of small metal fittings consisted of common machine operations, and could be performed by semiskilled labor. The welding together of the steel tubing for the fuselage framework, however, required a high degree of skill. The long-erons of the fuselage were of steel tubing, and cross-pieces of this tubing were also used for bracing at frequent intervals. Seat backs and certain parts for stream-lining the fuselage were aluminum-welded, and required welders of an expertness that was difficult to obtain.

Semiskilled labor was used in cutting, fitting, and doping the fabric which covered the wings and fuselage framework.

EXHIBIT 1

LABOR COSTS IN MANUFACTURING ONE MOTH AIRPLANE

(Based on the experience of the De Havilland Aircraft Company, Ltd.)

Description	Hours required	Lowell		Another city in Massachusetts	
		Rate per hour	Total	Rate per hour	Total
Woodworking:					
Wood mill.....	170	\$0.80	\$136.00	\$0.90	\$153.00
Wood detail.....	86	0.80	68.80	0.90	77.40
	20	0.70	14.00	0.80	16.00
	144	0.40	57.60	0.50	72.00
Metal working:					
Machine shop					
Bar lathe.....	6	0.35	2.10	0.50	3.00
Turret lathe.....	40	0.40	16.00	0.50	20.00
Power press.....	30	0.50	15.00	0.85	25.50
Milling.....	24	0.50	12.00	0.85	20.40
Fitting shop.....	78	0.60	46.80	0.75	58.50
	40	0.35	14.00	0.50	20.00
Cowling.....	73	0.40	29.20	0.60	43.80
Fuselage shop.....	291	0.60	174.60	0.75	218.25
Covering and Doping:					
Sewing machine.....	26	0.40	10.40	0.40	10.40
Covering.....	120	0.50	60.00	0.60	72.00
Dope and strip.....	92	0.50	46.00	0.60	55.20
Assembly:					
	9.5	0.60	5.70	0.75	7.13
	101	0.45	45.45	0.55	55.50
	52	0.32	16.64	0.37	19.24
Total.....	1,402.5	.....	\$790.29	.....	\$947.32
Average wage per hour.....	.....	\$0.56	.....	\$0.67	.....

A small crew of skilled workmen performed the complete assembly work on each airplane.

Exhibit 1 shows the number of labor hours required for each manufacturing process, based on the experience of the De Havilland Aircraft Company, Ltd., of England, and indicates the rate per hour paid each type of labor in Lowell as compared with another city in Massachusetts.

In March, 1929, the Moth Aircraft Corporation concluded a satisfactory agreement with the Wright Aeronautical Corporation whereby the latter leased the rights to manufacture and sell the Gipsy engine in the United States. The Moth Aircraft Corporation decided upon this policy because it desired to confine its efforts to the manufacture of airplanes during the ensuing one or two years, at least. It recognized that the Wright Aeronautical Corporation, as the largest manufacturer of aircraft engines in the world, would probably be able to supply Gipsy engines for Moth airplanes cheaper than the Moth Aircraft Corporation could manufacture them. The Moth Aircraft Corporation would also receive a small royalty on the Gipsy engines which the Wright Aeronautical Corporation sold to other airplane manufacturers. These royalty payments, however, were not considered to be an important source of income.

The Wright Aeronautical Corporation, on the other hand, was willing to purchase the rights to manufacture the Gipsy engine, since it desired to add a motor in this class to its line. The cost of developing a new airplane engine was estimated at between \$100,000 and \$150,000, so a considerable saving would be effected by operating under a license to manufacture this engine, which was already perfected. The Gipsy engine, moreover, enjoyed a favorable reputation that was world-wide, and was believed to be of a design that could be economically manufactured on a large scale.

The Wright Aeronautical Corporation planned to establish a factory in the St. Louis territory for the production of the Gipsy engine and expected to make sales throughout the United States to a large number of manufacturers producing light airplanes. Until deliveries of American-built engines could be obtained, in July, 1929, the Moth Aircraft Corporation planned to purchase Gipsy engines from the De Havilland Aircraft Company, Ltd.

The executives of the Moth Aircraft Corporation were not agreed on whether or not they should purchase engines as a permanent policy, or whether in the future they should plan to manufacture the engines which were installed in Moth airplanes. Proponents of the policy of the company's manufacturing its own engines pointed out that the most successful types of airplanes were designed and built for use with a particular engine, and that this fact was particularly true of the Moth airplane, which was engineered to fly as an integrated unit when combined with the Gipsy engine. Since the success of the Moth airplane depended so largely upon this engine, therefore, it appeared desirable to control the manufacture of the engines in order to make sure of the regularity and continuity of supply, and of the maintenance of the desired standards of quality in the manufacture of the engine.

Several executives stated that technical improvements in both the Moth airplane and the Gipsy engine would be facilitated if development work were in the hands of a centralized engineering staff within a single company. It was pointed out, furthermore, that if the Moth Aircraft Corporation produced its own engines it would be in a position to control the service which was provided users of those engines. Executives of the company all agreed that the reputation of the Moth airplane was affected by the promptness with which spare parts could be obtained for Gipsy engines, and the efficiency of the overhaul service that was available.

The evolution of the automobile industry was cited as an example of the development that airplane- and aircraft-engine manufacturers should prepare to follow. It was pointed out that automobiles, in the early years of the industry, were not equipped with a particular motor, but, instead, the purchaser was permitted to specify the make he desired. The practice soon became common in the industry of building models around particular motors, and of specifying that motor as standard equipment. The trend among automobile manufacturers had been toward building their own motors. Continental Motors Company, for example, produced a large proportion of all the motors going into finished automobiles during the early years of the industry; in 1928 the proportion produced by this company was negligible.

Such consolidations as the United Aircraft and Transport Corporation² and the integrated companies comprising the Curtiss group³ were pointed out as indicative of a trend toward closer relations between the airplane and airplane-engine manufacturer.

Other executives of the Moth Aircraft Corporation believed that the company should permanently adopt the policy of purchasing its engines rather than attempt to manufacture them. They pointed out that the technical problems of development and the problems of production were radically different for airplanes and engines. They also stated that Lowell could not supply the grade and quantity of labor necessary for the operation of a large motor manufacturing plant.

Several executives objected to any proposal to manufacture Gipsy engines because they did not believe the company could manufacture engines on a scale that was sufficiently large to obtain economies resulting from mass production. They believed that expansion in the sale of light airplanes for training purposes and sport use would be slow, and would never attain a volume comparable to that of light automobiles. They

² United Aircraft and Transport Corporation included the following companies: Boeing Airplane Company, Chance Vaught Corporation, and Hamilton Metalplane Company, engaged in the manufacture of military and commercial airplanes; Pratt & Whitney Aircraft Company, an airplane engine manufacturer; Hamilton Aero Manufacturing Company, propeller manufacturer; Boeing Air Transport and Pacific Air Transport, operating transport lines carrying mail, passengers, and express. United Aircraft and Transport Corporation also owned 50,000 shares of Aviation Corporation of the Americas, a holding company owning the stock of the Pan American Airways and other transportation companies.

³ The associated companies in the Curtiss group were commonly considered to include the following: Curtiss Aeroplane and Motor Company, Inc., Curtiss-Robertson Airplane Manufacturing Company, Sikorsky Aviation Corporation, Curtiss-Reid Aircraft Company, Ltd., Curtiss-Caproni Corporation, Sperry Gyroscope Company, Inc., Cessna Aircraft Company—as engineering and manufacturing companies; Curtiss Flying Service, Inc., Aviation Credit Corporation, Curtiss Aeroplane Export Corporation—as sales and service companies; National Air Transport, Inc., Transcontinental Air Transport, Inc., Southern Air Transport, Inc.—as transportation companies; National Aviation Corporation, Aviation Securities Corporation, Aviation Corporation of California, Aviation Securities Corporation of New England, North American Aviation, Inc., Aviation Exploration, Inc., Curtiss Assets Corporation—as finance and investment companies.

also believed that this smaller volume of sales would be divided among more manufacturers than in the automobile industry.⁴

Some figures for aircraft production in the United States since 1919 are shown in the following table:

DOMESTIC AIRCRAFT PRODUCTION *

Year	Total production	Commercial	Army	Navy	Others
1919	662	....	409	273	13
1920	....	....	215	42	7
1921	302	....	336	53	0
1922	....	....	175	39	0
1923	587	314	51	175	8
1924	....	....	60	76	1
1925	789	305	199	213	2
1926	1,186	858	112	163	53
1927	1,995	1,342	289	364	....
1928	5,000 †	3,781 †	....	1,219 ‡	....
1929	12,000 §				

* Source: *Standard Trade and Securities Service*, Vol. 51, No. 31, Standard Statistics Company, for figures 1919-1927, inclusive.

† Estimated on the basis of 3,501 commercial airplanes produced by 45 airplane manufacturers reporting to the Aeronautical Chamber of Commerce.

‡ Army and Navy figures combined.

§ Estimated.

Of the total production of 3,501 commercial airplanes reported to the Aeronautical Chamber of Commerce for 1928, 2,348 were of the open-cockpit biplane type.

Questions

1. As a long-time policy, should the Moth Aircraft Corporation decide to purchase the engines required for installation in Moth airplanes, or should the company make plans to manufacture its own engines?

⁴ The February, 1929, directory of heavier-than-air craft manufacturers published by the Aeronautical Chamber of Commerce listed 228 manufacturers.

43. LANSDOWNE TOOL COMPANY

Addition of a New Product

The Lansdowne Tool Company manufactured 8,000 varieties of small tools and utensils. The demand for its products was heaviest in the spring and in the fall. In the winter and in the summer seasons the volume of production dropped almost 50%, and one-third of the labor force was laid off. The plant was in a large city where the men could drift into other industries; 95% of those who were laid off did not return when increased business required the employment of additional laborers. Overhead charges were practically as high when production was small as when it was at its highest point. The company was faced with the problem of finding means to increase production from January to March and from June to August.

Three methods of solving the seasonal problem had been considered by the Lansdowne Tool Company. The simplest in theory was to influence retailers to buy in the off-season. This method had been tried successfully by manufacturers of other types of products, but, because competition was exceptionally keen in the tool and utensil field, retailers considered themselves under no compulsion to buy Lansdowne products except during periods of active consumer demand. Two years previously an extensive sales campaign had been carried on for the purpose of leveling the sales peaks. The result had been an increase in business of 10% during the dull season, but, because of the general publicity of the campaign, there had been also an increase of 25% during the busy months. Total sales had been increased, but the seasonal problem had not been solved.

The second possible method was to manufacture for stock during the off-season. Past experience with this method had shown that carrying charges were heavy and that there was uncertainty in predicting demand requirements several months in advance. The saturation of the market was more important, however, since it made impossible, without excessive sales cost, the disposal of the volume of products which the plant could produce if operated at capacity throughout the year. The current average production rate of 65 or 70% of capacity satisfied an annual demand, which had been expanded by the sales cam-

paign to the maximum that could be expected at the time. Even if the seasonal peaks were eliminated by this method, the permanent under-capacity production of the factory would remain a serious problem.

The third possible method was to acquire other lines with other seasonal peaks. By this method the plant could be operated more nearly at the same rate throughout all seasons, and its efficiency could be raised by the accompanying increase in the total volume of production. This plan had been tried at one time by contracting for special orders, mostly deep-drawn work, for other manufacturers. In 1920, these orders had stopped entirely, and, when other business had revived in the spring of 1922, the special work had failed to reappear. The advantage of the greater control over its own branded products as compared with that over the special orders was then evident to the Lansdowne Tool Company.

The adoption of one or more new lines whose marketing could be controlled would be the best solution to the seasonal problem, if those lines were well chosen. In considering new products, the importance of coordinating the sales, production, and financial policies of the business had to be recognized. The Lansdowne Tool Company had been offered the right to manufacture and sell a new type of automobile spotlight. Since the seasonal element was only one of several important considerations, it was suggested that the value of the spotlight or of any other proposed products be analyzed by means of the following questions, which should serve to bring out the salient points of market possibilities and of production requirements:

Marketing:

1. Are the unique selling points of the article sufficiently attractive to find a demand?
2. During what months will the demand be heaviest?
3. Can the new product compete with similar ones now on the market?
4. Can it be sold by the same selling methods that are already developed?
5. Can sales be made by the same salesmen? to the same customers?

6. What is a reasonable estimate concerning the probable sales and the permanence of the market?

7. Is the new product fully protected by patents?

Production:

1. Are the present machines adapted to the manufacture of the new product? What new tools and machines and how many would be needed?

2. What is the probable factory cost?

3. Will the seasonal peaks of this product help to fill in the present depressions in the volume of production?

4. Is the space required for the new product available without additional construction?

5. Are there new difficulties in production such as the need for larger inventories or greater skill than the present products require?

6. How long will it take to do the preliminary work necessary before starting production?

Finance:

1. How much new capital is required?

2. Will outside borrowing be necessary?

3. Will the probable profits be a fair return on the investment?

Marketing Features of the Spotlight.—The control device would be the important selling point of the spotlight, since in other ways it was not unique. The light was operated by means of a handle at the end of a flexible cable. When the handle was turned, the light moved horizontally; when it was pushed or pulled, the light was tilted vertically. This means of control would be an obvious convenience, especially in the case of closed cars or of cars with curtains.

The heaviest sales of automobile accessories were made at the times when new cars were purchased. Since the demand for all automobiles was greatest in the early spring, and for closed cars in the early fall, the sales peaks of the spotlight would come at those times. The seasonal situation of the Lansdowne Tool Company could be improved by manufacturing the spotlight from January to March for the spring trade, and from June to August for the autumn trade.

An estimate of production costs showed that the light could be sold profitably for \$5 to the retailers who would resell at \$7.50. At this price it could compete favorably with other high-grade lights.

A part of the existing output of the Lansdowne Tool Company consisted of small tools for automobiles. These were sold to retail accessory dealers and to manufacturers who supplied their new cars with tool kits. The potential buyers of the spotlight were already purchasers of some of the other products. It could be marketed, therefore, without the expense of hiring new salesmen or of finding new customers. A catalogue was being used for advertising purposes; the spotlight could be featured in it.

The marketing problem hinged on the sales estimate. It would be little more than a guess, however, to base the estimate on a certain percentage of the total number of car-owners in the country. The relative importance of closed cars, however, for which the light was best adapted, is shown by the fact that they comprised about 800,000 of the 2,287,000 ⁵ cars produced in 1922. When the spotlight had been first considered, the Lansdowne Tool Company's salesmen had been instructed to estimate the number that the customers in their territories would buy. After reducing these estimates to conservative figures, it appeared that sales of 10,000 reasonably could be expected during the first year. Large orders might be secured from automobile manufacturers for use as standard equipment; since these orders were uncertain, however, a minimum sales estimate should exclude them.

The Lansdowne Tool Company could expect a permanent market unless the light was later surpassed by that of some other manufacturer. Spotlights were not the type of fad which was popular one year and which disappeared entirely the next. The right to manufacture the light would be permanent during the life of the patent, since the inventor offered this concession in return for a reasonable royalty.

Production Aspects of the Spotlight.—The production of the light would involve deep-drawn work, screw-machine work, nickel plating, assembly, wiring, and soldering. There

⁵ National Automobile Chamber of Commerce.

was an ample supply of presses for the deep-drawn work and a well-equipped plating department. The screw machine department, however, consisted of antiquated equipment which practically had been scrapped. The company, moreover, had no equipment for assembly, and did not have experience in wiring and in delicate soldering.

An estimate of the costs of production had been made, and it was found that the cheapest method of manufacture would be to do only the deep-drawn work, plating, and assembly at the plant and to have the screw-machine work done under contract by another factory. On the basis of 10,000 lights per year, the factory unit cost, including the inventor's royalty, was estimated at \$3, and the necessary total investment in tools and equipment at \$30,000. This plan would result not only in low production costs, but also in small investment in tools and equipment. The latter would be particularly desirable in view of the new and untried character of the product. The drawing press and plating departments, which presented the greatest problems of seasonal valleys, moreover, would be utilized. Although the production of the light would not keep all the equipment in these departments busy, it would reduce idle time charges by utilizing some machines which otherwise would be shut down. Since the screw machines were obsolete, it was found practicable to remove them in order to use the space then occupied for the assembly department.

The problem of securing adequate and experienced help for the assembly work could be solved by hiring a foreman who was familiar with the processes involved and by subdividing the work so that girls could be trained readily to do the individual operations. The production department was familiar with the other work and could utilize men who otherwise would be laid off.

The question of inventory was not of great importance. There was always on hand sheet metal which was suitable for the shell of the lamp, and the remainder of the parts, including glass, sockets, goosenecks, and wire, could be ordered in the quantities desired for production. With two manufacturing seasons, the company could expect to turn its inventory twice a year. The maximum amount tied up in raw material, work in process, and finished goods normally would not exceed

\$15,000. The time necessary to redesign the light for economical production, to secure the necessary dies and tools, and to complete the first lot of 5,000 should be approximately one year.

Capital Requirements and Expected Profits.—The maximum cash requirements for the first year of production would be about \$60,000, consisting of \$15,000 for inventory, \$30,000 for new tools, \$10,000 for advertising, and \$5,000 for other working capital. The financial position of the business was sufficiently strong to make outside borrowing unnecessary. The gross profit on 10,000 lights, based on a factory cost of \$3 and selling price of \$5, would be \$20,000. Of this amount, 20% of the factory cost, or \$6,000, should be deducted for selling and commercial expense, and \$10,000 for initial advertising. The net profit of \$4,000 which would be realized the first year would amount to only a 6.7% return on the capital invested. The manufacture of this article in the dull season, however, would decrease the overhead and manufacturing expenses of the other products. In addition, the direct return on the spotlight enterprise would increase in succeeding years, since it would not be necessary to spend such a large proportion of the gross profit for advertising.

Questions

1. What were the particular losses resulting from the seasonal fluctuations in the volume of production operations?
2. Should the company have added the automobile spotlight to the line of its products? Discuss the factors supporting both positive and negative conclusions.

CHAPTER XV

PRODUCTION CONTROL¹

44. HAPGOOD MANUFACTURING COMPANY

Adjustment of Production to Business Conditions

The Hapgood Manufacturing Company produced bleached sulphite pulp and writing paper. The mills were located in northern Wisconsin in three groups: one at Andrews, one at Billings, and one at Smithstown. Andrews, a town of 30,000 inhabitants, had a variety of manufacturing establishments. The population of Smithstown was 20,000, and it had three other industries besides paper manufacturing. Billings was a newly settled town of about 2,000 inhabitants in which the Hapgood Manufacturing Company was the only manufacturing enterprise. The Billings plant, which was located in the woods near the source of supply of raw material, consisted of a sulphite pulp mill and a paper mill with auxiliary departments. At Smithstown was a sulphite pulp mill and a paper mill. The Andrews plant included a sulphite mill, paper mill, rag-pulp mill, box factory, and other departments.

The combined production of the three pulp plants amounted to 70,000 tons annually, of which about 31,500 tons were consumed by the company's paper mills; the balance of the pulp was sold in the open market. The combined output of the paper mills was approximately 44,000 tons per year. The plants of the company covered a ground area of 20 acres and a floor space slightly in excess of 34 acres. The company had a contract for power for the Andrews group with the Andrews Electric Light and Power Company, which on June 1, 1920, had 10 years to run. The timber lands owned in fee consisted of approximately 200,000 acres, and the company controlled through stock ownership of

¹ DUTTON, pp. 337-353; JONES, 294-315; MARSHALL, 823-850.

other companies about 192,000 acres of timberlands. In addition, the company had stumpage contracts covering a large additional acreage. The timberlands for the most part were accessible to the mills of the company by river or rail. Early in 1920, the company contracted to buy a large supply of pulp wood, so as to reserve its own supply for later use.

In 1916, the company began to install a modified form of the Taylor System in its production department in order to systematize the execution of the work. The system was in successful operation by 1919. As a result, production was greatly increased and, in spite of a large overhead expense, the total manufacturing cost was reduced. By means of this system the company was able to plan the work completely before a single move was made. A route sheet giving the names and order of all the operations which were to be performed was first made out, together with clearly written instruction cards for each operation. The best method for performing each operation had already been determined by the company and was included on each instruction card. A requisition on the stores department, stating the kind and quality of the materials to be used and where they were to be moved, also was made out for each operation. Thus, the order and assignment of all work or routing, as it was called, was conducted by a central planning or routing department. In this way the control of all operations in the production departments, and the progress and the order of the work were brought back to a central point.

Modern methods of accounting had been installed which showed the manufacturing expense account for the year by 13 periods of 4 weeks each, instead of 12 monthly periods. At the expiration of each of these periods a profit and loss statement and a balance sheet showing assets and liabilities were drawn up. A cost department also was maintained from which detailed comparative figures for each period were obtained.

The Hapgood Manufacturing Company had a highly organized labor department that had been in successful operation for 10 years. Considerable welfare work had been carried on, a pension system installed, and an active and efficient safety committee organized. There had never been a strike in any of the plants, and many of the workers had been in the employ of the company for 15 years or more. The company was particularly

proud of the fact that it had always given steady employment. It had an agreement with its workers to pay them a half-base wage if they were laid off because of curtailment of operations; the company, however, reserved the right, on 30 days' notice, to cancel this agreement.

On Jan. 1, 1921, the Hapgood Manufacturing Company had no funded debt. The authorized capital stock consisted of \$1,500,000 common, \$5,750,000 7% cumulative first preferred, and \$1,750,000 second preferred; par common, \$5; par first and second preferred, \$100. The first preferred dividend was payable quarterly, Feb., May, Aug., and Nov. 1; the second preferred dividend was payable quarterly, Jan., April, July, and Oct. 1. On common, initial quarterly dividend of 50 cents a share was paid Jan. 1, 1920; April 1, 1920, 50 cents, and 50 cents extra; July 1, 1920, 50 cents, and 50 cents extra.

Exhibit 1 gives the items of the balance sheet on Jan. 1, 1921.

The bond and ledger paper that this company manufactured was sold entirely to jobbers and retailers as medium-priced paper. About 60% of the mills' output was sold under jobbers' watermarks. Altogether, several hundred watermarks were placed on the paper that this company manufactured. During the war, the company cooperated with the Conservation Division of the War Industries Board in reducing the number of varieties and styles of its product, and as a result, by Jan. 1, 1921, 75% of the paper sold under its own watermarks had been standardized. Direct sales never had been made to retailers and large consumers. The company advertised its own watermarks nationally, and the cost of this national advertising called for a large annual appropriation. A selling office was maintained at the Andrews plant, but the main sales headquarters were at Chicago, with a branch in New York City. The company had on its pay roll a general sales manager and nine salesmen.

For the first six months of 1920 the company experienced the largest business in its history: On June 1 of that year orders were booked for full capacity of both plants for the next six months, and the selling organization was forced continually to refuse orders. At this time prices of raw materials and finished product were higher than they ever had been in the history of the paper industry. There was considerable general talk about a shortage in raw materials, and grave concern over the future

EXHIBIT 1

HAPGOOD MANUFACTURING COMPANY

Balance Sheet as of Jan. 1, 1921

(000 omitted)

<i>Assets</i>	
Cash	\$ 551
Investments, Bonds	123
Investments, Subsidiary and Allied Companies.....	435
Accounts Receivable	2,560
Timberlands	1,344
Inventories, Merchandise and Supplies.....	5,864
Advances, Pulp Wood.....	2,773
Plant	13,125
Miscellaneous	26
Prepaid Expenses	274
	<hr/>
	\$27,075
<i>Liabilities</i>	
Accounts Payable	\$ 557
Notes Payable	2,184
Reserve for Depreciation of Plants.....	3,249
Capital Stock:	
First Preferred	\$5,750
Less Stock in Treasury.....	276
	<hr/>
Second Preferred	1,750
Common	1,267
Surplus	12,594
	<hr/>
	\$27,075

supply of pulp wood. Because of this, in May, 1920, the company contracted for enough pulp wood to last through June of 1921, at the rate of production that existed at its pulp mills for the first six months of 1920.

About October, 1920, the company started to receive cancellations, and sales for spring delivery declined 50%. By Jan. 1, 1921, the demand for fine and medium-grade papers had practically ceased. At this time the company still had unfilled a few small orders from customers. It had in stock a normal supply of finished paper of all lines, while for one or two lines it had on hand a small surplus stock. There was no demand for

bleached sulphite pulp, and the company was making no shipments against contracts. The pulp mills were being operated only on part time, that being sufficient to produce the pulp required by its own paper mills.

Because of the condition that existed, the president of the Hapgood Manufacturing Company on Jan. 5, 1921, asked to have estimated costs drawn up and plans outlined for two possible courses of action: (a) complete shut-down of all plants; (b) operation of the pulp mills at a capacity sufficient to fill the pulp requirements of the paper mills.

The production of a surplus stock of pulp was not considered advisable because of the bulky nature of the finished product. From the start the executives believed it to be better to use all existing space for the storage of paper, which occupied far less room per unit of weight. When careful estimates had been compiled, based on normal operations for a four-week period, it was found that, with a complete shut-down of the plants, an expense of practically \$352,000 would have to be met. With no production to cover this expense, it would be necessary to absorb it from the profits realized during the subsequent revival of operations.

A comparison between the cost of operating the plants at a normal rate of production with the cost of closing down entirely is set forth in Exhibit 2. The table provides for the normal

EXHIBIT 2
COST OF SHUT-DOWN COMPARED WITH COST OF NORMAL
OPERATION OF PLANTS

Mill	Cost of shut-down	Additional costs required to operate	Increase, percentage
Andrews Paper.....	\$118,578	\$47,124	40
Andrews Pulp.....	79,692	11,070	14
Billings Paper.....	20,904	12,684	61
Billings Pulp.....	33,681	6,855	20
Smithstown Paper.....	59,289	23,562	40
Smithstown Pulp.....	39,849	5,535	14
Total of all mills.....	\$351,993	\$106,830	30

operation of the paper mills, with the pulp mills at Andrews and Smithstown operating approximately 50% of capacity and a 40% pulp production at Billings (four-week period).

After examining the figures an executive made the following statement:

Expenditures made during a shut-down are lost altogether. The figures drawn up by our cost department show, moreover, that to operate at normal capacity, producing surplus stock, would mean the expenditure of only 30% additional funds.

Our present inventories of raw materials and supplies on hand are more than sufficient to operate the plants at normal capacity for several months, and, in the case of many raw materials, much longer. So far as raw materials are concerned, therefore, no new or additional funds would be required, as the money has already been invested and to operate the plants would merely mean transferring inventory from the raw material and supply accounts to the finished stock accounts. The interest on additional funds and a possible additional insurance cost, our accountant tells us, would be somewhat higher than normal, but the only substantial additional charge resulting from operating at a normal rate rather than ceasing operations would be the increased storage charges. Furthermore, there would be a heavy expense in starting the mills up again, when business warrants, due to probably heavy initial repairs, gathering crews, and building up the organization, as well as loss on second-quality pulp and paper produced in starting under these conditions. Without a doubt, the pulp would run dirty at the outset and be of generally poor quality until the operation had been continued for some little time and the regulation of the process again secured. This would mean the production of second-quality pulp, which would have to be sold at a discount from the regular market price for first-grade normal pulp. I believe troubles of a similar nature would be experienced in the paper mill, and the first runs of paper would doubtless have to be jobbed at a considerable sacrifice.

After carefully reviewing the cost figures submitted, the executives decided that it would be more desirable to continue operating and producing surplus stocks than it would be to shut down. Their reasons, financial and otherwise, briefly were as follows: First, steady employment and full wages would be given to many people who would otherwise be laid off on half-base wages, or about 35% of their normal earnings. It was estimated that in the first four-week period, this half-base wage

payment would amount to approximately \$78,000. Second, the executives believed that when the business revival came, which they believed was due within a year, there would be a subsequent peak demand for paper because of depleted stocks. By operating continuously the Hapgood Manufacturing Company would be in a position to render its customers better service than ever before, not only on their own watermarks and plain paper, but on the company's watermarks as well. It would be in a position to give immediate delivery from stock on its own watermarks and on plain paper, and because the machines would be free of the company's marks, it could more quickly produce customers' marks. The executives believed that by producing surplus stock, instead of shutting down, they would stock up for the next peak demand, and the result in the end would be a larger volume of business than would otherwise be the case.

Another advantage in operating the plants considered by the executives was the effect on the "net quick" of the company. With the mills in operation, even with no sales, most of the money expended would be tied up in inventories, and the "net quick" would not suffer appreciably. With the mills shut down and no production, the "shut-down cost" would reduce the cash by approximately \$352,000, which would cause a reduction in "net quick." It was estimated that operating the mills for one four-week period, without orders, even if the finished paper were sold at 20% less than the average gross selling prices for the period ending December, 1920, would result in a small final net profit as compared with a loss of approximately \$352,000 if the plants were shut down flat. It was thought that the stock would probably not have to be stored a year before it was sold, and that the selling price might not suffer the 20% reduction.

On Apr. 1, 1921, the executives of the Hapgood Manufacturing Company again faced a situation which called for careful consideration and prompt decision. Sales for the first three months of 1921 had amounted to only 25% of sales for the same period in 1920. All attempts to increase the sales had not resulted in any considerable amounts of business, and it did not appear possible to keep the mills in operation. Since January 1, the company had been building up a surplus stock of its regular standardized papers, until in April it reached the maxi-

mun decided upon, amounting in the aggregate to 25% of the total output of the plants for the year 1920.

The company had attempted to secure "make and hold" or consignment orders to be billed later at prices prevailing at the time of shipment, whenever within the year 1921 that might be. The result of this attempt had been disappointing, and only one small consignment order had been received. The company had also tried reducing considerably the prices both on paper and on pulp, but no particular revival of demand had resulted. The sales department had attempted to secure business by price guarantees against decline, but the plan had met with comparatively little success.

Questions

1. Should the company have decided, on Apr. 1, 1921, to continue production or to shut down?

2. Analyze the policies of the company in 1919, 1920, and in January, 1921. Comment upon the soundness of the decisions of the executives at each of those times.

45. ELVERSON GAUGE COMPANY

Continuous Runs for Manufacture of Job Lots

The Elverson Gauge Company manufactured gauges which were used on steam boilers, compressed air tanks, and similar equipment, to indicate the intensity of pressure. Sales were made directly to manufacturers whose products required gauges. The types were not standardized; specifications of customers' orders varied according to the use of the appliances and according to the preferences of each customer. The quantity ordered ranged from a single gauge to 500 gauges or more. Since each order usually specified a different quantity and type of gauge, it was difficult to secure the economies of standardized production. Shop orders were scheduled in the sequence in which customers' orders were received. The planning manager considered it possible to effect economies in operations by accumulating shop orders until the number of gauges of one type was sufficient to constitute a full day's output.

There were five main parts in each gauge: the metal case, usually cylindrical in shape, which enclosed the mechanism; a

spring, which was moved by the pressure applied to the gauge; a movement by which the changes in position of the spring, caused by varying intensities of pressure, were transmitted to the hand; a dial, with a scale marked on it to show the number of pounds of pressure; a hand, which was controlled by the movement and indicated the number of pounds pressure on the scale; and a ring, to hold the glass front in place. Customers' orders specified the size and the kind of material for the case, the pressure, and the use of the gauge. In addition, minor variations in specifications, which did not affect the operation of the instrument, often were made, such as the finish of the hand and dial or the method of attachment of the ring.

Case castings and movements were purchased from other manufacturers. Production operations were divided into five processes as follows:

Drilling cases

Putting spring and movement in the case and connecting

Marking dial and testing

Stamping and finishing dial

Assembling and testing

All operations were performed by hand, except drilling cases.

Gauges of unusually large size and those used for special purposes, which constituted about 10% of the total output, were produced in a special department. In this department, all processes of manufacture necessary for one gauge were performed by a single employee. The remaining 90% of the output were manufactured in the five production divisions.

After an examination of customers' orders, the manager of the planning department was of the opinion that shop orders could be sorted according to similarity of specifications. He estimated that 75% of orders received could be accumulated, until a sufficient quantity was collected to require a full day's production. One hundred fifty gauges of the simplest type were set as the standard for each day's output. This figure was decreased for more complicated gauges, according to the time necessary for production. If a shop order differed from other orders only in one process, it was to be routed with those similar to it.

A reduction in labor cost was the chief advantage to be derived from the suggested plan. If employees performed operations on only one type of gauge each day, greater speed was attainable. For instance, installation of spring and movement, and connection of the two, could be performed more quickly when only one type of spring and movement was used during a day. Savings were also probable in the other hand operations. In drilling, a slight economy of time was possible, because drills could be used without resetting during the day. Operations were facilitated also by the use of only one kind of material. The planning manager estimated that the total time required for the production of a gauge could be reduced approximately 25%. An improvement in quality also could be secured, through the daily concentration of employees' efforts.

A serious disadvantage, however, was delayed delivery. A customer who required 10 or 15 gauges might be unwilling to wait until the company accumulated orders for the specified quantity of similar gauges. The necessity also existed for production of rush orders and of those types not in regular demand, which had been estimated as 25% of the total. In periods of inactivity, the total volume of orders would not be sufficiently large to permit accumulation.

The planning manager was of the opinion that serious delays in delivery could be avoided by a careful selection of the kinds of orders to be accumulated. This could be accomplished by classification of orders received during the previous year or two. After initial selection, experience was expected to indicate those orders which were received too infrequently for accumulation. No additional clerical expense was involved in making this classification.

It was possible also for the company to manufacture for stock those gauges which were in regular demand, whenever insufficient orders for one type had been secured. Ample storage was available for stock gauges. Although an increased inventory allowed greater uniformity of operations, it required investment of working capital in stock. The stock-turn of inventory was 1.5 per year.

Because of the increased output per employee to be secured, the planning manager decided to accumulate a sufficient volume of shop orders of one type for a full day's production. The

company's salesmen thereafter were instructed to urge customers to specify standard types of gauges whenever possible.

Questions

1. What were the dangers the company faced in deciding to accumulate a sufficient volume of shop orders of one type for a full day's production?
2. What factors would have made such a method of handling job lots unsatisfactory?

46. JACKSON FILE COMPANY

Centralized Control, Scheduling

In 1918 the Jackson File Company, because of difficulties it had been having in making a satisfactory division of production among the various kinds of files which it manufactured, was in need of a suitable system of production control.

The Jackson File Company employed about 300 people in its plant. The company manufactured files of approximately 1,000 sizes and shapes. These were made to stock so that, in many instances, orders from customers could be shipped as soon as received.

The chief raw material used in the manufacture of files was steel, which the company bought in sizes varying according to the size of file to be made. Approximately 200 sizes and kinds of steel were required for the files which the company manufactured. The purchasing for the plant was done by the plant superintendent. He made estimates of what he thought the plant could produce during the year for the various sizes and kinds of files, and made steel purchases accordingly. He placed orders for steel once or twice a year.

The making of a file involved two major operations: forging the blank from the raw stock, and cutting. A blank of a given size could be used for any one of from three to eight kinds of files. The blanking process required six different machine operations, and the cutting process from eight to ten machine operations.

The machinery in the factory was highly specialized, but a given machine, such as a cutting machine, could be used on from 4 to 6 sizes of files. The range of files that a given machine

could work on could be increased by the addition of attachments to the machine. The Jackson File Company had 200 machines of 30 kinds.

As soon as raw steel stock was received at the plant, it was as a rule ordered into process and forged into blanks of the sizes to which it was suited. Work on such an order would extend through a period of from one week to six months, depending upon the size of the shipment of steel received. The blanks were put into stores as completed.

Manufacturing orders for finished files originated with the clerk in charge of the finished-files storeroom. A stores card was kept for each size and kind of finished file, with the following headings: "In Process," "In Stock," "Shipping Orders For." If, for example, a shipping order for 1,000 dozen 8-inch mill bast files was received, the stores clerk would look on his stores card for these files. He might find that 300 dozen were in process and 200 dozen in stock, a total of 500 dozen that could be applied against this order. He then would issue a manufacturing order to cut from blanks enough files to supply the shortage on the order in hand, plus whatever quantity he thought advisable to keep in stock.

This method of purchasing raw material and ordering work into process, because it made no provision for preserving a proper balance between the kinds of work in process, had resulted in excessive stocks of blanks for files for which no orders were received, and in much idle equipment. Investigation showed that for some kinds of files enough blanks had been forged to last three and four years, and that certain classes of equipment were idle at least 20% of the time. This condition existed in spite of the fact that the company was receiving more orders for files than it could fill.

In 1918, therefore, the management authorized a member of the organization to install a system of control which would overcome the defects of the existing system and which would increase the total production of the plant. The company wished to keep costs of control at a minimum.

The executive selected for this work first learned the number made of each size and kind of file over a period of years in terms of percentage of total production. He found that this percentage for a given kind and size of file was fairly constant

from year to year, and also that 90% of the company's output was of 90 sizes and kinds of files; and 10%, of the remaining 910 sizes and kinds. He compared the manufacturing costs and profits on the different sizes of files with the percentages of output for the corresponding sizes.

He then tabulated for each machine in the plant and for each operation performed there the rate of output per hour. These figures he arrived at by making time studies and by comparing the results of these studies with the past production records of the most capable men in the shop.

On the basis of the percentages which production of the various files had borne to total production in the past, and on the basis of the rates of output for the various machines and operations, the executive prepared a master schedule for the ensuing year. This schedule allowed for an increase of 33% in the total output of the plant. The schedule specified weekly rates of production for all sizes of blanks and for all sizes and kinds of finished files made from these blanks. Manufacture, therefore, was to continue on a stock basis.

The executive then drew up a control card for each size and kind of finished file. This card was so arranged as to make the following information available at all times:

Weekly rate of production as specified on the master schedule;
Total number of files started into process to date, since the beginning of the year;
Total number of files in process at each of the major operations;
Total number of files finished to date, since the beginning of year;
Total number of files in stock-room;
Orders received to date, since beginning of year;
Shipments to date, since beginning of year;
Unfilled orders.

All information on these control cards was expressed in terms of dozens of files and, also, in terms of weeks of work. Thus, if there were on hand unfilled orders for 1,250 dozens of a given size and kind of file, and the master schedule called for a weekly production of 100 dozens of this file, the cards would show

that there were unfilled orders on hand for 1,250 dozens, or an equivalent of $12\frac{1}{2}$ weeks' work.

The control cards were kept in a visible file in a small room adjacent to the superintendent's office. The visible part of the card, as the card lay in the rack, showed the kind and size of file for which the card was kept, the total production of that file to date in terms of weeks of work, and the scheduled production of that file at that date in terms of weeks of work. Actual and scheduled production figures were shown by means of a scale representing the weeks of the year and two tabs which were placed on the scale at the proper positions. If actual production was behind scheduled production, the visible tab for actual production was red; if actual production was equal to or in advance of the schedule, the visible tab was black. Therefore, by simply glancing over the rack containing the 1,000 cards representing the 1,000 kinds and sizes of files made, those responsible for production could see on what files production was behind schedule, and how many weeks behind.

The rack of control cards was kept posted to date, both as to figures and as to the location of the tabs, by one girl, who spent about two hours a day on this work. Each day she made a list of files which were behind schedule, and another list of files for which new production orders should be issued. Both of these lists were sent to the superintendent. Copies of the list showing the files behind schedule also went to the foremen in the shop. The list of files for which production orders were to be issued, after being approved by the superintendent, was sent to a clerk who made out the following forms:

1. Lot cards, which acted as move tickets, and accompanied the lots through the factory;
2. Time tickets, one for each operation necessary on each lot;
3. Cost cards, one for each lot;
4. Progress cards, one for each lot.

The lot cards were either white, green, or red: white for an ordinary stock order; green for an order to apply on a shipping order already at hand; and red for a special rush order.

The time cards showed the lot number, the size and kind of file, and the operation to be performed. These cards were sent

to the departments where the work called for was to be performed. In each department there was placed a board upon which was listed the name of each man who was working in that department. Underneath each name were three sets of clips: the top clip was to hold the time card for the work on which the man was employed at the time; the second clip was for the time card for the work which he was to begin next; and the third clip was for time cards for all the other jobs scheduled for that man. A time clock was placed in each department. The foreman was responsible for seeing that each worker always had enough work ahead of him. Time cards were not sent to a department until the lot called for on the cards actually had arrived in that department, so that work could be begun on the lot at any time.

The progress card for a lot was a printed card giving the size and kind of file, the lot number, and the operations to be performed on that file. A clip was put on the card over the first operation listed. As work on the lot progressed, this clip was moved from one operation to another, so that at all times it was evident what operation was being performed on that particular lot. Information needed for the moving of this clip was obtained from the time cards as they were returned to the office. The color of the clip corresponded to the color of the lot card which accompanied the goods through the factory; that is, the clip was white, green, or red, depending upon whether the lot was for stock, for a shipping order on hand, or for a special rush order. The rack of progress cards was kept on the wall in the room adjacent to the superintendent's office, in which the control cards also were kept. Both the control cards and the progress cards were accessible to the foremen. The location of any lot in the factory and the nature of the order which the lot was to fill could be determined easily by means of the progress rack. By reference to the control card for the files of the kind and size specified in an order for a particular lot, the record of the manufacture of that kind and size of file since the beginning of the year, and the relation of actual production and that required by the master-schedule could be determined. The rack of progress cards was posted once a day, in about one hour's time.

By means of this system, and without the addition of a single indirect employee, the production of the Jackson File Company

was increased in the period from 1918 to 1920 by 100%. The manager was convinced, however, that production could be increased still more if additional control records were kept.

The manager pointed out that the system of control which the company had adopted provided no record of the volume of work in terms of hours ahead of each machine or class of machines. Such a record should show whether a given class of machines was idle, or whether more work was scheduled for it than it was capable of producing within the required time. The record would assist in the maintenance of a proper division of work among departments.

The company decided to install a board on which the classes of machines, grouped according to the kinds of files that they could produce, were listed vertically. Two clips were placed to the right of the listed name of each class of machines, one above the other. One clip was to hold time cards for all work ahead of that class of machines and ready to be worked on. Beside that clip was a string, which could be drawn out horizontally to any length desired. The length of the string was adjusted daily to show the total number of hours' work represented by the cards in the clip. The second clip contained the time cards for all work scheduled for that class of machines in the factory but not yet ready to be worked on. An adjustable string also was placed to the right of this second clip, to indicate the total hours' work represented by the cards in that clip.

Questions

1. Describe the difficulties experienced by the Jackson File Company which led the management to establish a centralized system of production control.
2. What benefits were secured from the control system set up?

CHAPTER XVI

PURCHASING AND INVENTORY POLICIES¹

47. SHEFFIELD CHOCOLATE COMPANY

Speculation in Raw Materials

The Sheffield Chocolate Company, which manufactured bar chocolate and chocolate-coatings for confectioners, was highly successful in sugar speculations in 1919 and 1920. Notwithstanding this fact, however, the directors were undecided whether or not the purchasing agent should be allowed to continue to buy and sell raw materials beyond the needs of the company.

The Sheffield Chocolate Company operated two factories 500 miles apart; 150 men were employed in each. The products were sold chiefly on six-month contracts. In 1919, the sales averaged \$150,000 per month. The sugar used each day in the preparation of chocolate aggregated about 25 barrels, of 350 pounds each, or slightly more than 2,500,000 pounds per year. It was not customary for the company to hedge its purchases of sugar. It bought in excess of requirements when a rising market was forecast, and only enough to supply the factory when falling prices were expected. The officers relied upon this policy to return a small trading profit, after inventory losses, which resulted from misjudged price trends, had been deducted.

In order to conserve the available supply of sugar, the United States Sugar Equalization Board, under authority of an act of Congress, purchased the entire 1918-1919 Cuban crop. Since the sugar was rationed by the board to refiners in accordance with their previous consumption, and since the sale price of refined sugar was fixed at 10½ cents, it was necessary for the

¹ DUTTON, pp. 354-371; JONES, 318-345; LINCOLN, 512-545; MARSHALL, 365-384.

refiners to ration it similarly to manufacturers and wholesalers. For this reason, numerous users were not permitted to purchase as much sugar as they required. This fact, and the reports of a short sugar crop for 1919-1920, indicated to the purchasing agent that, with the abolition of government control, the prices of the available supplies would increase markedly. The Sheffield Chocolate Company consequently decided to speculate in sugar, and entered into contracts for delivery of both raw and refined products during the first half of 1920. The prices at which these were made were slightly higher than the price which had been fixed by the Sugar Equalization Board for 1919 delivery. From October to December, the purchasing agent contracted for three lots of raw sugar, aggregating 15,000 bags of 320 pounds each; one for delivery in the second half of January, and two for delivery in May. The prices specified ranged from \$28 to \$34 per bag. In order to establish the company as a customer with the sugar refiners, the purchasing agent contracted for the delivery of a total of 25 barrels per day from three or four sources for four months. In addition, a contract was made with a wholesaler for a like amount per day for six months from March, 1920.

The wholesalers and refiners with whom contracts were made were aware that the company could use only a fraction of the supplies which it had purchased; but, since they were of the opinion that market prices were near the peak, they were willing to make sales on the credit of the company in order to dispose of their supplies. Thus it was not necessary for the Sheffield Chocolate Company to provide a margin, and since the sugar in almost every instance was sold for immediate delivery, before it was received in New York or shipped from the refineries, no carrying costs were incurred.

As forecast by the purchasing agent, the price of sugar rose abruptly on Jan. 21, 1920, from the government price of $10\frac{1}{2}$ cents to 15 cents, and continued upward until May, when $22\frac{1}{2}$ cents was the average wholesale quotation for the month. The wholesaler with whom the contract for 25 barrels per day had been made delivered sugar under it for four weeks; at the end of that time, he requested the Sheffield Chocolate Company to cancel the agreement. A settlement was effected under which the former paid the company \$65,000. As the price of sugar

continued to rise,² the raw sugar held by the Sheffield Chocolate Company was resold gradually. A profit of \$98,000 was netted on 10,000 bags. The Sheffield Chocolate Company had 5,000 bags of its raw sugar refined and sold the product at 17½ cents, whereas 13 cents was the total cost. The profit on this transaction amounted to \$72,000. The sugar in excess of requirements contracted for from refineries was sold in like manner throughout the spring and summer of 1920 at an average price of 17½ cents. The Sheffield Chocolate Company received from its sugar transactions a net profit of between \$300,000 and \$400,000.

Since over 75% of the contracts for chocolate and chocolate-coatings for delivery during 1920 had been made early in the year, the Sheffield Chocolate Company was not embarrassed by cancellations as it might have been if the contracts had been made later at higher prices. Manufacturing activity was sustained until the fall of 1920, when the failure to secure materials necessitated a slackening in production. When orders from confectioners ceased to be received, the company was not able to meet its obligations, except with the funds secured from profits on sugar transactions earlier in the year.

Two of the directors maintained that speculation in raw materials was hazardous and should not be continued. They were apprehensive lest in the future the losses more than offset gains. They favored the adoption of a policy under which sugar should be purchased for immediate needs only. In spite of the position of these directors, however, it was decided to continue the purchase of sugar in excess of requirements, in accordance with market conditions as forecast by the officers of the company, and to look upon the profits realized in this manner as a legitimate business gain and as a source of funds to offset any trading losses which might be incurred.

² Prices of refined sugar in cents per pound in 1920:

January	15.4	July	19.1
February	14.9	August	16.7
March	13.7	September	14.3
April	12.9	October	10.8
May	22.5	November	9.6
June	21.2	December	8.1

Questions

1. Define commodity speculation.
2. Should the company speculate in the purchase of its raw materials? Give reasons.

48. CONRAD FURNITURE COMPANY

Centralized Control of Purchasing

The Conrad Furniture Company manufactured high-grade furniture upon the special orders of its customers. The company had been in existence for over a hundred years and enjoyed an excellent reputation for making quality products. The assistant to the general manager of the company had had experience in production, and as part of his office duties he undertook to install centralized control of purchasing in the hope of securing increased economies. Within two months he had incurred difficulties inherent in the craftsmanship type of production. The question of continuing the practice of centralized purchasing, therefore, was being considered by the executives of the company.

The sales of the company were made to interior decorators, who resold them to clients for whom they were doing work, or directly to clubs, private homes, fraternal organizations, and hotels, in all parts of the United States. The number of pieces of furniture produced each year was constant; sales amounted to approximately \$300,000. Almost one-half of the company's business each year consisted of two or three large contracts.

The supremacy of the Conrad Furniture Company in the high-grade furniture field was the result of the skill of the employees, all of whom were craftsmen; many of them had been with the company 25 years. The foremen were regular workmen who, because of exceptional ability or long service, had been made the heads of their departments. The general manager, who had been employed by the company for 40 years, however, did not place full responsibility upon them. He walked through the plant many times each day, greeted workmen by their first names, made decisions on details, and assisted foremen in the solution of problems which they brought to his attention.

Thirty per cent of the total cost of production was for mate-

rial; labor represented almost all the remainder. The final cost of the latter, however, was difficult to estimate; prices quoted by the company, consequently, varied from 50% less than actual cost to 50% more than actual cost.

On January 1 each year, foremen estimated from observation the quantity of materials on hand and reported this with a statement of the current market value to a clerk who computed the inventory.

When an order was received, drawings of the piece of furniture to be constructed were made in the designing department. Upon the basis of blue prints of these drawings, the head of the designing department, the mill superintendent, and the general manager quoted prices. Under the system of independent purchasing, the foreman of each department then placed orders for the materials required for his part of the production. A few materials, such as office supplies, nails, designers' materials, art material for the decorators, varnishes, shellacs, oils, glues, burlaps, and cotton cloth for upholstery, and a few types of hardware were purchased for stock. Paints, varnishes, and oils were purchased, regardless of price, from one or two companies which furnished a definite quality. Tapestry of the required quality, which was imported material, was obtainable only from a few companies. The lumber used was purchased air-dried and was then kiln-dried in the company's own kilns. Most lumber was of standard quality. Orders which amounted to more than \$2,000 each were approved by the general manager. The foremen checked materials received and were held responsible for their conformance to specifications and quality.

The assistant to the general manager realized that only an expert could judge by observation the water content of lumber. He was unable to determine whether or not vendors supplied him with the stated grades and he, therefore, did not purchase lumber independently. He believed, however, that he could make independent purchases of stock material and thereby secure lower prices than had been obtained by foremen who had become accustomed to purchasing from one or two companies. Foremen described to him such materials needed, and by purchasing them he could save time for these men, whose attention should be given to production. If all purchase orders were sent to him to be mailed or delivered in person to vendors, he was able to

secure lower prices, and to control or observe the quantity and prices paid. Under this plan it was impossible for foremen to obtain a commission on materials ordered.

During the first month or two of his attempt to systematize purchasing, however, he had found that the time spent in describing materials was much greater than that required by foremen for writing and mailing orders. A man who was not a master-craftsman could not realize the details of an artistic product and at the same time visualize its place in every individual scheme of interior decoration. To be successful, therefore, an independent purchasing agent for this plant had to have the combined knowledge of all the foremen.

When, under centralized buying, purchases were made by the agent at the direction of the foremen, the latter were responsible for quality. On all purchases, however, when the purchasing agent made the decision from whom to buy, he alone was responsible. No instance had occurred where the foremen openly criticized or objected to usurpation by the purchasing agent of what they considered their responsibility, or where they objected to his criticisms of their orders, but there had been an atmosphere of hostility. A return to purchasing by foremen would restore the friendly atmosphere which was essential where production was of a craftsmanship type.

A typical example met in the two months of systemization was as follows: Shellac purchased at a lower price than that previously paid was applied to a table which was to sell for \$500. Total shellac used was worth about \$1. It became blotted and the table had to be refinished at an approximate cost of \$50. The quality previously purchased would have cost approximately \$1.50.

Questions

1. What general conclusions regarding purchasing policies can be drawn from the experience of the Conrad Furniture Company?

2. Is such an enterprise as the Conrad Furniture Company adapted to considerable expansion in the extent of its operations? What are the reasons for your reply?

42 HUDSON SHOE COMPANY

Methods of Figuring Unit Costs for Raw Materials

The Hudson Shoe Company manufactured medium- and high-grade shoes. The growth of the company had caused the antiquated method of accounting for stocks of raw materials to become increasingly unsatisfactory. The company was planning, accordingly, to set up a "stores" system, which was to be used for the determination of the proportion of the cost of finished shoes represented by the cost of the raw materials. A central storeroom was partitioned off, and standard equipment for holding the leather and other important materials was installed. The management wished to determine what method of figuring raw-material unit costs should be used in the new stores system.

A balance-of-stores sheet was made out for each item of raw material stocked. On the card were noted a description of the item, the unit by which it was measured, and its location in the storeroom. Three main columns were provided on the balance-of-stores sheets. These columns were headed "Ordered," "On Hand," and "Amounts." Under the heading "Ordered" were columns for entries of the dates on which orders were placed, the numbers of the purchase orders, and the quantities ordered. The "On Hand" section provided columns for entries of the dates on which materials were received and the quantities received, the dates materials were issued from stock, and the quantities issued, and the balance on hand. The unit cost and the total cost of each receipt, of each issue, and of the balance of the article on hand were shown under the heading "Amounts."

A minimum stock limit was set for each item, and when the quantity on hand fell to that minimum, a replacement order was started. For most items, the size of order was prescribed definitely.

The accounting department had one controlling account headed "Stores," to which all purchases were charged. When materials were issued, this account was credited with the value of the issue, and the manufacturing operation account debited. The balance-of-stores clerk gave the accounting department the unit costs and the quantities issued, and this department then figured the total value of the issues.

The balance-of-stores clerk and the chief accountant dis-

cussed the method to be used in figuring the unit costs of the various items. Making a preliminary investigation of the methods used in other factories, the clerk and the accountant found five methods which the Hudson Shoe Company might use. They were not able to agree on which one of these methods to follow, and asked the general manager for a decision.

The five methods provided for: *account*
Sal

1. The use of an average unit cost;
2. The use of the unit cost of the last shipment received of the item;
3. The use of the unit cost of the shipment having the highest unit cost;
4. The use of a unit cost for each lot received;
5. The use of standard costs, with periodic adjustments for differences from actual costs. *Then come*

Under the first method, the total cost of each in-shipment plus the freight and express charges was added to the total cost of the quantity of the item on hand before the new shipment was received. A new cost per unit then was figured by dividing the total cost so obtained by the number of units on hand. Issues of stock were charged out at that average, until a new shipment came in and a new average was figured.

Under the second method, the unit cost of the last shipment received of an item was used as the unit cost value of subsequent issues of that item until the next shipment came in, when its cost replaced the previous one.

Under the third method, the highest unit cost paid for any part of an item then in stock was taken as the unit cost of any issue of that item.

The fourth method provided that a separate card stating the unit cost be kept for each lot received. The lot received first would be accounted as issued first, whether physically so issued or not, and its unit cost used until the lot was exhausted. Then the price of the second lot would be used until all that lot was charged off, and a similar procedure would be followed for subsequent lots.

The last method, that of using standard costs, required the selection of a fair standard cost for each item, at which to charge all issues of that item into process. Such a standard

would be in effect for whatever period of time seemed suitable. Periodic adjustments in the book records of work-in-process and in the inventory of raw materials would be made for the differences between the total amounts charged at the standard costs and the actual average costs for the period.

Question

1. Discuss the advantages and disadvantages of the five methods of computing raw-material unit costs named, having in mind the purpose for which the Hudson Shoe Company intended to use them. Which method seems to be the most satisfactory?

50. RUBBERWEBB MANUFACTURING COMPANY

Status of Purchasing Agent in Organization

The Rubberwebb Manufacturing Company produced rubber belting, garden hose, floor coverings, and other mechanical rubber merchandise. In June, 1923, a new purchasing agent was appointed by the president of the company, as a part of a general internal reorganization. The new purchasing agent believed that he could operate the purchasing department more satisfactorily if it functioned under the merchandise manager instead of under the treasurer, as in the past. The advisability of making this change was being considered.

At that time, the organization chart of the company was as follows:

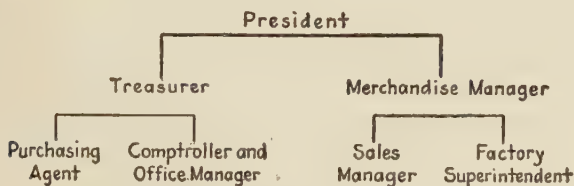


EXHIBIT 1.

The merchandise manager had the position usually called general manager. He was in charge of the plant in Jersey City, and also of the sales office and sales personnel at the general offices in New York. His responsibilities included the super-

vision of production, and the determination of the policies pertaining thereto, such as lines to be manufactured and the volume of output. He also directed distribution, which included advertising. The storeroom at the Jersey City plant was under his control.

The treasurer had charge of finances, collections, and payments; of the clerical force at the New York office; also of the purchase, both of office supplies and of raw materials and supplies for production. Purchases had been made by a man who also had charge of the general office, except sales personnel, under the designation of comptroller. Materials purchased consisted of \$450,000 annually of rubber, \$300,000 of duck, 2,000 tons of coal, and miscellaneous items—a total of \$1,200,000 each year.

The new purchasing agent received from his predecessor several contracts for six months' supply of materials of different kinds. He had to dispose of many materials and contracts at a loss because the manufacture of the goods for which the commodities were intended had been discontinued. The output was seasonal for different lines. Approximately 15% of all sales were for delivery on contract for a year. The purchasing agent bought materials required to fill these orders on contract.

The rubber market in 1923 was unstable, and important consumers of crude rubber had refrained from making customary purchases, buying only enough to permit continuous operations. The Stevenson Act had been put in effect by the British government late in 1922; this act tended to restrict the amount of crude rubber exported from British Malaya and Ceylon when prices were low. In 1923, only 60% of estimated 1920 production was exportable without a prohibitive penalty. Provision was made for the gradual removal of the restriction as prices rose. Various factors influenced the price of crude rubber: the international market and political conditions, accidental events such as the sinking of a large shipment or the failure of a wholesale rubber distributor, and changes in use of rubber. The variations in the price of rubber offered an opportunity for speculation.

The company took advantage of this situation and made speculative purchases of rubber either by buying and selling contracts, or by contracting for future delivery and reselling

materials upon receipt. This policy was usually applicable to qualities that might be used in production, but occasionally qualities which could not be used by the company were purchased for resale when prices were unusually low. Just prior to the appointment of the new purchasing agent, such a purchase of rubber had been made. Prices had dropped rapidly; the material was sold, therefore, at a decided loss.

Cotton also presented the possibility of speculation. In 1923, it offered an opportunity either for speculation or for routine purchasing on the basis of lower price. The policy had been to buy a year's supply of cotton in the bale and have it spun, woven, and finished as required.

The new purchasing agent found that the treasurer's office did not have adequate records of production, or a suitable tie-in with current production records, or satisfactory perpetual inventory. He drew up, therefore, a perpetual inventory system for the storeroom, and charted previous sales, purchases, and production, which he followed closely. He also determined a minimum for each material, and when the quantity in stock reached that point, a purchase of the commodity was made. These minima were based on experience in the plant and current knowledge of the time required for deliveries. Estimates made by the management were modified by his judgment, and he also arranged that all customers' orders be reviewed by him before they were sent to the factory.

The new purchasing agent previously had had executive experience in production. In his opinion, material should be sent without interruption into the storeroom from the sources of supply, and in the same manner from the storeroom to the production department. The purchasing agent was to be responsible for maintaining an adequate supply of satisfactory materials purchased at the lowest prices obtainable; interest charges on material inventory were included as costs.

In 1923, it was a buyer's market in other lines than cotton and rubber, and routine purchasing was advisable. Purchases in 1918 and 1919 in industry were made a year or more in advance. After a few months in 1923, however, the purchasing agent had learned where to make the most advantageous purchases by comparison of prices and frequency of purchases prevalent at that time in the industry. These factors in purchasing,

his previous experience in production, and his current knowledge of conditions, he believed, made him an authority on where and what to purchase and how much to pay for it. The remaining factors of when and how much to buy, the purchasing agent believed should be subject to question or control by either the treasurer or the merchandise manager in this company.

The treasurer could not be expected to follow routine production and operating statistics. He knew financial conditions and had to plan his financial policy to meet commitments for materials bought. Because of the company's speculation policy, the treasurer's knowledge of financial requirements enabled him best to determine when to speculate and to what extent.

The merchandise manager could not be expected to follow the financial conditions as closely as the treasurer. The merchandise manager primarily had control of production rather than of speculation. He had, however, to provide and supervise warehousing facilities for materials. He decided policies, moreover, such as the addition or discontinuance of lines, and thereby controlled quality and volume of materials. He was interested mainly in keeping stocks in the warehouse low, and, although the perpetual inventory system put in by the purchasing agent made possible the supervision of inventories by the treasury department, the storerooms were under the direction of the merchandise manager and at a distance from the office of the treasurer.

Questions

1. Should the purchasing agent be responsible to the treasurer or to the merchandise manager?
2. Discuss the advisability of having a purchasing agent in the production centers—Singapore, for example—as compared with having him in the United States.
3. Was speculation in crude rubber justified?

CHAPTER XVII

WAGES¹

51. ALDRICH MACHINE COMPANY

Construction of Composite Method of Wage Payment

The Aldrich Machine Company was engaged in the manufacture of a product which involved the assembly of some 18 or 20 parts. It had in operation a regular cost system by which the work-time put in on different operations was recorded, the existing system of wage payment being piece work for all direct wages, and time work for all indirect workers such as foremen, inspectors, storekeepers, floor sweepers, and clerical help in the factory. Work tickets were issued for each operation. Parts were normally made for stock upon manufacturing orders, and the cost sheets were designed to show the monthly accumulation of all costs or all assemblies of each type which had been made during the month.

There had never been serious labor trouble at the Aldrich plant, as the proprietors had always maintained an open-minded and sympathetic attitude towards their employees. In pursuance of this policy they were considering the construction of a composite method of wage payment which they hoped would give recognition to all the principal factors commonly involved in a wage-rate discussion. The scheme tentatively proposed for this purpose was as follows:

The total wage should be influenced by three major factors: first, the personal qualities of the individual workman; second, the output of the group with which the workman was identified; third, changes in the cost of living.

Suppose, for example, a workman's wage should at the outset approximate \$30 a week. It would consist of a personal base rate of \$15, and piece-work wages based on normal production which, if reached, would remunerate the worker to the extent of \$15. If he failed to reach the normal production, this part of

¹ DUTTON, pp. 492-510; JONES, 175-185, 434-497; MARSHALL, 173-185.

his wages would be reduced correspondingly; on the other hand, an excess of production over the normal quantity would yield him a higher return as far as this particular element was concerned. Changes in the three elements of the total wage would occur as follows: the first part of the wage, giving recognition to the personal qualities of the workman, might be increased with every year of service; changes also might be made to give recognition to the workman's versatility, quality of work, cooperative spirit, initiative in making suggestions or improving methods of work, reliability, attendance, and the like. For workers not being trained, that is, for experienced employees, this part of the wage would not be changed oftener than twice a year.

This base rate would be multiplied by a factor varying with the cost of living. Every quarter one of the standard indexes of prices would be scrutinized and the cost-of-living factor would be adjusted in proportion; no change of less than 2% in the cost of living would be considered; changes of 2% or more would be applied to the base rate, the percentage of change being doubled in making the calculations, since the base rate was approximately one-half of the total wage.

The piece rate, forming the base of the second or production element of the wage, would, of course, be changed only under the same conditions as any other similar rate might be changed. In general it would be desirable not to change it at all unless some modification in working arrangements or mode of processing were introduced.

The proposed plan might work somewhat as follows:

	1	2	3	4	
	Base rate	Cost-of- living adjustment	Total, columns 1 and 2	Piece- work earnings	Total wage, columns 3 and 4
(1) At outset.....	\$15.00	....	\$15.00	\$15.00	\$30.00
(2) Cost of living up 3%.....	15.00	\$0.90	15.90	15.00	30.90
(3) Man rerated, that is, personal rate in- creased.....	16.00	0.96	16.96	15.00	31.96
(4) Piece-work earn- ings increase.....	16.00	0.96	16.96	15.50	32.46

Questions

1. Does this method of computing and adjusting wages avoid any of the common objections to straight day work or to straight piece work? Give a detailed explanation of your answer.

2. Compute the total wage per week under the circumstances described above if the base rate were \$18, the cost of living up 10%, and piece-work earnings up \$1.

52. HARNETT MANUFACTURING COMPANY

Installation of Bonus System

In the Harnett Manufacturing Company, which was engaged in the production and assembly of small motors and generators, 70% of the employees were on a piece-work basis. Of the 30% on a day-work basis, a majority were in the tool department, where tools were constructed and repaired. There had been complaint that slow production in the tool department was interfering with operations in the other departments. Consequently, the management considered the advisability of installing a bonus system of payment in that department, with a view to increasing the efficiency of the workmen.

Tools were seldom reproduced. Furthermore, operations on similar work varied, and consequently, piece rates were impracticable. Each job was analyzed from the blue prints into separate operations, which were recorded and scheduled on the production sheets. Each employee specialized on one type of operation; all lathe work was assigned to lathe operators, and the same method was applied to milling, bench, backing-off, boring, grinding, and sharpening work. The employees, who were experienced tool-makers, followed the instructions on the production sheets; otherwise, they were under no restrictions and performed their tasks in whatever way seemed best to them. The management was convinced, nevertheless, that if the men were given an incentive in the form of a bonus, increased production, lower unit costs, and better coordination with the other departments would result. Satisfactory relations existed between the employees and the company. It was suggested, however, that the inauguration of the bonus plan should take place at a time when there was sufficient work to keep all men occupied. Otherwise,

increased production by some workmen might mean loss of jobs by others; and under those circumstances, the failure of the plan was certain. Once the plan had been in successful operation a sufficient length of time to gain the confidence of the employees, however, there was less danger that the cause of necessary lay-offs would be misunderstood.

Consequently, in January, 1923, with orders for its product increasing, the Harnett Manufacturing Company undertook to install a bonus system in the tool department. This system in brief operated as follows: standard times were set for each operation, and in addition to the day rate, a bonus was paid based on one-half the time saved; the saving represented by the other half was retained by the company. The day rate remained the same as previously.

The man who analyzed the jobs from the blue prints was a graduate of an engineering school and had been employed for several years in drafting and in tool making. Upon him was placed the responsibility of setting the standard time for the completion of each task. Except in rare cases, no two tools were alike. Furthermore, the time required by different men on similar tasks varied. Consequently, although the task-setter kept records of the time consumed on various operations, he was forced in the main to rely on his own judgment in determining standard times. To his estimate was added 25% as an allowance for possible delays, and this was the total time to be entered against the operation on the production sheet.

The production sheets were kept by the foreman who allotted the work as appeared advisable. When assigned to a task, a workman had the privilege of determining from the production sheet the time allowed him. In only three situations could the standard time for a task be changed. First, if there had been an obvious error in the time set, a correction was made. Second, if the stock-room clerk was unable to furnish the material specified in the blue print, that fact was reported to the task-setter, who then estimated the time on the basis of the stock available. To reduce to a minimum the possibility of delay from this cause, the drafting department kept in close touch with the stock-room and assured itself that the proper materials were on hand.

3. Third, if a workman was convinced that the procedure specified by the task-setter was not the best and could convince him of

that fact, a new time was determined, based on the revised method of operation.

When a man completed a task, the elapsed time, as shown by his time card, was entered against the operation on the back of the production sheet. When all work on the tool was completed, this sheet was turned over to the timekeeper, who checked elapsed time against allowed time and entered the balance, if any, on each man's weekly record. It was thought best to credit each workman with his bonus time after all operations on the tool had been finished, rather than immediately after the completion of his task, for the following two reasons: First, the practice of the company was to inspect only completed tools. It was assumed that if one man performed his work poorly and did not report the fact, the man on the next operation would do so, in order not to be blamed for the imperfection. So few spoiled pieces had further operations performed upon them that the management was convinced that more frequent inspection would not be worth while. It was equally convinced that bonus time should not be reckoned before the workmanship had been inspected, lest the stimulus for quality production be reduced. Second, the production sheet on which were recorded the allowed and the elapsed time remained with the tool, and was not given to the timekeeper until all operations had been completed. More frequent reckoning of bonuses would have necessitated extra clerical work, which the company decided was not justifiable.

Bonuses were not paid on individual operations. All tasks on tools completed during the week were figured collectively for each man, his minutes gained weighed against his minutes lost, and the balance used to compute his bonus. In arriving at the balance, the timekeeper added together all the minutes credited to the man during the week and divided this sum by two; from this he subtracted all minutes lost charged against the man during the same week. The credits were divided in half because the agreement of the company was to pay a bonus for one-half the time saved. The excess time, however, was subtracted in full, because, from the viewpoint of the management, the man had consumed not only estimated time plus the 25% allowance, but also additional time. Inasmuch as every precaution was taken to insure reasonable continuity of production and since the 25% allowance had been granted to cover possible

delays, the management could assume reasonably that the extra time consumed was the man's own fault and should be charged against him in its entirety. Thus, if a man worked 48 hours in a week and for the jobs completed during that week had been credited on the timekeeper's record with 15 hours saved and charged with $3\frac{1}{2}$ hours lost, his total time was 52 hours $\left(48 + \left[\frac{15}{2} - 3.5\right]\right)$. This figure was used by the pay-roll department in determining his week's wage. If an employee's bonus time showed a minus balance, he was paid for the actual time he had worked, since he was guaranteed his full day rate. Moreover, every week's bonus record was complete in itself; a minus or plus balance for one week had no effect on subsequent earnings.

Although a man knew what bonus he had earned or lost on each task, inasmuch as the tools on which he had worked sometimes were not completed until from four to six weeks later, he never knew in advance what his weekly balance would be. To give him this information and thus guard against possible indifference, an efficiency list showing the plus balance credited to each man for the jobs completed during the previous week was posted one day before pay day. This list stimulated the interest of the men and aroused a spirit of competition among them. Furthermore, a permanent record was kept of the weekly efficiency of each man as shown by these lists, and this record was consulted when questions of promotion or layoff arose.

Wages and bonuses were paid in one lump sum. It was thought unnecessary to have any mark of distinction between the two amounts, inasmuch as each man knew his day rate and was able to estimate his bonus from the efficiency list.

In case of spoiled work, men who had completed their tasks satisfactorily on that tool before the damage was detected were credited or charged with their minutes gained or lost. The man who had performed his task imperfectly, however, was required to do the operation over again. He received his day rate, which was guaranteed, but all time spent on the second task was added to the time consumed on the spoiled one and figured on the bonus record as if he had spent the combined time on the one operation.

Questions

1. What are the essential characteristics of a bonus in order that it shall serve as an incentive to better and faster work?
2. Do you think that the bonus system described in the above case would work out satisfactorily?
3. Would the system work better or worse if a large number of the same kind of tools were made, and if each man performed all of the work necessary to make each tool?

53. PENNELL HOSIERY MILLS

Profit-Sharing

The Pennell Hosiery Mills were located in a town of about 8,000 inhabitants. There were no other textile manufacturing establishments in the town and, consequently, there was ordinarily little direct competition for labor. Approximately 700 workers were employed, most of whom were skilled; payment was made on a piece-rate basis. The mills had been in operation for 20 years, and cordial relations had been established with the employees. The average length of service was about three years. About 80% of the workers were women.

In order to maintain the good will of the employees, the company had granted bonuses of 10% of total wages for the years 1917 and 1918. Because of the increased earnings of the company in 1919, the bonus was increased to 15% of total wages. This increase in earnings had not resulted from greater interest on the part of the employees but from a larger volume of sales and an appreciation in inventory. The extra remuneration did not affect the quality of the work in the succeeding year. The bonus was paid in a lump sum at the end of the year and was spent and forgotten quickly by the average employee.

In January, 1920, during a period of maximum production, the management decided to discontinue the bonus and to adopt a profit-sharing plan. The output of the mills was being disposed of easily, and profits were satisfactory. A permanent place of employment was not as highly valued as in a less prosperous period. Because of the high wages and abundance of work in the nearby towns, the employees had become lax and careless. The profit-sharing plan was instituted in order to

interest the employees permanently, and as a group, in the welfare and prosperity of the company, and, consequently, to encourage care and economy in the use of materials and to develop a sense of pride in the manufacture of a satisfactory product.

The following agreement was made with the employees. As soon as possible after December 31 of each year, until the agreement should be abrogated, the net profits of the company for the calendar year were to be ascertained. One half of this sum was to be placed to the credit of the body of employees by proper entries upon the books of the company; the other half was to remain the separate property of the management. The amount credited to the body of employees was divided among individuals according to the ratio of the individual wage, or salary, for the year, to the total pay roll. Fifty per cent of this individual profit was paid in cash, and a certificate for the remainder was issued. The amount represented by the certificate remained with the management; the employees were to receive interest annually upon it at the rate of 6%.

Employees who entered the service of the company after January, 1920, were not to commence to share in profits until they had remained with the company for three years. When an employee who had remained with the company for five years or more retired, he could redeem the certificates, with interest, in one year after notice of retirement had been given, the valuation to be that of the date of payment. An employee who left voluntarily before the expiration of five years' service agreed to permit the amount for which he held certificates to remain in the business until the expiration of five years from the date of his employment. The management reserved the right to pay the whole or part of any certificate at any time.

If a loss were sustained in any year, it was to be borne equally by the management and the employees. If the funds credited to the employees were insufficient to meet their obligations, the amount was to be advanced by the management. The sum so advanced was to be charged against future credits to the employees. Losses were to be shared by individual employees in the same proportion as profits.

The agreement provided that at the end of each calendar year the regular accountant of the management should ascertain

the amount of total net profits and should state to each employee the amount of his share. This statement was to be final unless a majority of all the employees, by written ballot, voted to have the accounts examined for the purpose of determining their correctness. The expense of such an examination was to be borne by the employees. The decision of the management was to be final in controversies arising with respect to the promptness, efficiency, and performance of duty of any employee. The title to all property remained in the management, and the agreement provided that the enterprise should be conducted, managed, and controlled solely by them without interference on the part of the employees. The management reserved the right to increase or decrease the number of active employees. When any employee was discharged, full settlement for the certificates was to be made in cash.

If at any time the interests of the employees exceeded a fair valuation of the property of the management, a corporation was to be organized upon the initiative of the proprietors or a majority of the employees. All the real and personal property of the old company and the right to use its name were to be transferred to this corporation. The capital stock was to be equal to the value of all property rights and interests that had been transferred to the corporation by the employees and proprietors. The par value of the stock was to be \$100 per share. The proprietors and employees were to receive and accept, in full payment for their interests, shares of capital stock of the corporation, at par value.

It was provided that the agreement might be abrogated and this plan of profit-sharing abandoned by the management at any time after the expiration of two years, if, in their opinion, the purposes for which it had been established had not been realized. In this event, the certificates of employee ownership were to be redeemed in full in cash. No mention was made of possible abrogation of the plan on the part of the employees.

After the plan had been in operation for three years, the expected results had not been achieved. The cooperation of only about 50% of the employees was secured. While none of the workers openly opposed the plan, half of them were totally indifferent to its advantages. The possibility of eventual ownership was too far removed. The profits received by the indi-

viduals depended not only upon their own productiveness, but upon the productiveness of all the other employees and upon the financial success of the company as a whole. The stimulus provided was too indirect; the worker was likely to assume the attitude that individual slackness did not affect net profits to an appreciable degree. The average amount received by individual employees, including the higher factory executives and foremen, as bonuses in 1917, 1918, and 1919, were approximately \$120, \$140, and \$190, respectively. In 1920, the average amount received by the individual employee under the profit-sharing plan was \$200. In 1921, there were no profits, because the company had not reduced its wages from the high point reached in 1920, whereas most textile mills had effected a 22½% reduction. If the Pennell Hosiery Mills had done this, the net profits for the year 1921 would have been \$200,000, and under the profit-sharing plan only \$100,000 would have been paid to the body of employees, or approximately \$142 to each individual.

Questions

1. Was it advisable to continue the profit-sharing plan?
2. What means should be adopted to insure the full cooperation of a majority of the employees?
3. Was it a wise policy not to have effected a wage reduction in 1920 or 1921?

54. THRASHER COTTON MILLS COMPANY

Sale of Common Stock to Employees

The Thrasher Cotton Mills Company, which operated three mills for the production of cotton cloth, had 11,000 employees. In the spring of 1923 a committee of employees requested that the company allow workers to purchase common stock of the company under a plan of installment payments. The market price of the stock was about 96. The dividend rate was 6%, and dividends of at least 6% had been paid continuously since 1890. The company had an opportunity to secure a block of 5,000 shares at 91 from an associated company, and contemplated resale at the same price.

It was the policy of the company to comply with reasonable requests from employees whenever possible. Approximately 750

employees already had purchased the company's stock on the open market. Other employees desired to invest in the stock because they were familiar with the company and had confidence in its ability to pay dividends. They did not have sufficient funds, however, to make immediate payment, and sought the adoption of the installment plan because it allowed them gradually to acquire ownership of the stock.

The interest of employees in the company's prosperity was thought to be stimulated by ownership of stock. Although not every worker was expected to become a stockholder, those who purchased were likely to be the leaders and the most influential among their fellows. As stockholders they would realize that whatever was advantageous to the company, benefited them. It was desirable, furthermore, for the company to encourage among the employees a sense of importance as part owners of the corporation. Under this plan, the Thrasher Cotton Mills Company could expect better cooperation in securing economy of operation and in readjusting wages. A reduction in labor turnover also was possible, because workers who owned shares were not likely to seek employment elsewhere.

The officers believed that the results of the sale of common stock to employees by several large companies, such as the United States Steel Corporation and the American Woolen Company, were satisfactory. The interest of employees in the prosperity of those companies was said to have been strengthened by stock ownership.

Plans for sharing profits with employees had been rejected previously by the company because the workers might have looked upon such payments as an indication of a low level of wages. Employees generally preferred high wages to gratuities. Even the semblance of giving the latter would be avoided by the sale of common stock, because when employees became part owners of the company, they shared the earnings at the same rate as did the owners.

If the stock bought by employees were held as an investment and not sold when the price declined slightly, reduction in the market fluctuation of the stock was possible. A wider market for the stock was provided also, because employees were likely to purchase additional shares subsequently on the open market after they had formed the habit of saving. If employees found

it necessary, on the other hand, to sell on the market at a price below 91, the discontent and resentment caused by such losses might defeat the purpose of the plan. It was suggested to the officers, furthermore, that the interests of employees were not well served by investments of savings in the company which furnished their livelihood. They were especially in need of income from savings when the company was not prosperous and when employment was uncertain. At such times, however, the market price of the stock was likely to be low, and dividends reduced.

It was probable that comparatively few workers could avail themselves of the opportunity presented by the plan, and hence the benefits to be derived by the company were limited. A frequent disadvantage of the sale of common stock at less than the market price was that employees might sell their rights to subscribe or dispose of the stock to individuals not employed by the company. A few companies avoided this difficulty by paying a bonus to those who held the stock for a specified period of years. Since it could be specified that the stock was not to be sold until it was purchased in full, installment payments extending for a year or more would prevent immediate disposal of stock. It could be stipulated that after an employee completed payments and became an outright owner of the shares, he would be justified in selling them when he desired. If restrictions on the right to sell were imposed, the discrimination would remove employees from the class of holders of common stock.

Another plan suggested for eliminating risk of loss to employees from a decline in price was to create a special class of stock. This stock would not be negotiable and would be preferred as to dividends. A fixed minimum rate could be established which would equal the dividend rate on the common stock with a provision that it be raised to correspond with increases in the common stock rate. Thus employees would be assured of sharing profits equally with common stockholders without the risk of a serious decline in price. They would not be given voting power and would be unable to sell the stock except to the company at the price paid. This plan would have an advantage for the company in that the desired amount of stock could be issued and sold at any figure decided upon, regardless of the market price for common stock.

This suggestion was not adopted, because it would eliminate the advantages to be gained by the company from employee ownership of common stock. Unless risks were shared by employees, there was no incentive for them to cooperate with the management. The risk involved could be explained fully before agreements to purchase were made and no one was to be urged to buy the stock.

The officers recognized that employees' entire savings should not be subjected to risks in the company which supplied their chief means of livelihood. Since the probable subscription of each worker was only two or three shares, the investment would not constitute all his savings. Some employees, however, were not likely to save the amounts necessary for the purchase of stock unless the installment plan were offered.

The officers decided to purchase the block of 5,000 shares and to sell the stock to employees on installment terms. Employees could agree to purchase from one to five shares at \$91 a share. If subscriptions to more than 5,000 shares were received, the company reserved the right to reduce the number of shares allotted in order to allow at least one share to each applicant. It was specified that \$5 a share be paid within 5 weeks after date of announcement of the plan, with additional payments to be deducted from pay at the optional rate of either \$1 or \$2 a share each week. The company was owner of this stock until full payment was received, but dividends declared were credited to the account of the purchaser. Interest at the rate of 5% a year on unpaid balances was charged quarterly. Employees were permitted to cancel purchase agreements at any time, and to recover the total amounts paid, less dividends. There were no transfer rights until the stock was paid in full. The following paragraph was contained in the announcement of the plan:

The company is now paying 6% dividends, that is, \$6 a year on each share of stock, but of course cannot guarantee the future rate or the future market price of the stock. All employees who become stockholders under this plan will, after receiving their stock, thus be on exactly the same basis as any other stockholders, with the same rights and benefits and the same risks.

In the 5 weeks which intervened between the announcement of the sale and the last day on which applications were accepted,

the market price of the stock declined from \$97 to \$90, in accordance with a general downward movement in stock prices. In spite of that fact, however, 2,376 shares were purchased by 695 employees who formerly had owned no stock in the company. The officers realized that the offer had been made at an unfavorable time. Subscribers, however, did not cancel their commitments. The remaining stock was held in the treasury until employees should request another opportunity to purchase stock on installment payments.

Questions

1. Discuss the advisability of employee ownership of shares of common stock of the Thrasher Cotton Mills Company
 - a. from the point of view of the company;
 - b. from the point of view of the employees.
2. Would there be significant differences in your conclusions if the company were a telephone company?
3. To what extent, if any, are dividends on common stock of a company held by employees of that company profit-sharing, and to what extent are they a return to the employee as a capitalist?

CHAPTER XVIII

LABOR ORGANIZATION ¹

55. ELMORE COMPANY

Authority of Works Council

In 1923, the Elmore Company decided to employ a firm of industrial engineers to install a new system of production control and wage payment. Shortly after the engineers began work, the employee representatives in the works council at this company's plant asked that they be informed in detail of the company's plans, stating that the matter had been brought to their attention by chance and not officially. They believed that the company should afford them opportunity to express their views on the proposed wage system.

The plan of employee representation in effect in the Elmore Company's plant had been established in 1921. It was expressly stated that the works council could discuss wages, hours, working conditions, safety, and welfare activities, and make recommendations to the management concerning these matters. The works council was a bipartisan body of 20 employee representatives, elected from their respective departments, and an equal number of management representatives. The majority vote of each side was recorded as its unit vote on any issue before the council.

The plan of representation had been submitted to the employees and had been accepted by them in referendum vote. A minority, however, was bitterly opposed to the plan because of a desire to strengthen a labor union in which probably 20% of the Elmore Company's workers held membership. This union had called an unsuccessful strike against a wage cut agreed to by the works council about six months after the council's organ-

¹ DUTTON, pp. 476-491.

ization. Since that time, the union had not gained ground, although there were men in the plant who actively opposed the plan of employee representation and advocated unionism in its place.

During the 30 years that it had been in existence, the union had waged several bitter strikes against the Elmore Company and other companies in the city engaged in the same line of manufacturing. The Elmore Company had not dealt with the union officially for more than 15 years; the company objected to the type of leadership in the organization and to the violence and intimidation that had characterized the labor controversies in which the union had participated.

Most of the company's employees were semiskilled or unskilled. Operations were standardized and subdivided. Working conditions in certain departments were unpleasant because of the nature of the raw materials handled. In a few production departments there were skilled laborers, and the maintenance department employed a majority of craftsmen, such as machinists, carpenters, and pipe fitters. Unskilled labor was used in many of the production departments where the operations were simple; this type of labor was used also in transporting and loading materials and in various rough jobs about the plant.

The Elmore Company had reduced its rate of labor turnover considerably in the eight years prior to 1923, but the operating conditions in its plant, as well as the character of the local labor market, tended to keep this rate above 100% per annum. The city in which the Elmore Company was located was an industrial center in which a variety of products were made. This city was on a number of railroad systems, and a substantial part of its working population drifted back and forth between it and other nearby cities and agricultural sections. The labor turnover of the Elmore Company was particularly high among the unskilled workers. The company had found that a layoff of a fourth of its employees reduced its turnover rate 50%.

The management had proposed the plan of employee representation as a means of affording better contact with the employees. At first the plan was viewed with suspicion, but later the employees brought up before the works council many questions, dealing usually with working conditions, personal complaints, and piece-work rates. These questions had been settled

satisfactorily. Wages had been decreased and increased at the recommendation of the council; individual jobs had been rerated; working schedules had been revised; and in other ways the council had shown its usefulness to both management and employees.

The Elmore Company bought its raw materials and sold its finished product in highly competitive markets. Its opportunities for competitive advantage lay chiefly in improvement of its plant management and marketing methods.

In recognition of this situation, the company had inserted the following clause in the plan of employee representation:

The action of the works council shall relate to policies of the company in regard to matters of direct interest to the employees. The execution of policies remains with the management, although the methods employed by it are proper subjects for discussion in the works council.

In another clause it was stated that when the council could not agree on any plan of action or recommendation to the management, a counter proposal could be made. There was no provision for arbitration of deadlocked questions or for their reference to some official of the company or to its board of directors for final decision.

Approximately 4,000 workers were employed by the Elmore Company, and there was, in general, one representative for each 200 employees in the several precincts into which the plant had been divided. Within some of the precincts there were as many as 50 separate tasks, each having its own piece rate.

In deciding to install the new system of production control and wage payment, the management had been of the opinion that the step would improve the grade of foremanship in the plant and would induce the workers to put forth their best efforts.

In principle, the wage system which was to be introduced was based on production standards. The company guaranteed a minimum hourly wage. When any operative, or group of operatives, if the group system had to be used, was credited for more work than was called for by the standard, the operative or the group received a bonus equal to 80% of the piece rate, for the production above the standard. The other 20% was shared among foremen and indirect labor. The company saved in in-

creased use of plant and consequent lower overhead costs. The production standards were to be set after time studies had been made of the operations. It was expected that a new study would be made whenever an operation was changed. Time studies were made upon individuals and groups of men at work; the engineering firm disapproved of laboratory studies or the use of pace-makers.

When the employee representatives asked for information regarding the new system, the senior management representative on the works council suggested that the request be referred to the general manager, and that a special meeting be called to hear his reply. This suggestion was acceptable to all present.

The general manager decided to present in a letter to the works council his views on the authority of that body. In the letter he said that the council, in his judgment, should limit its discussions to methods and policies in force. He thought that freedom on the part of the management to make changes in operating plans was essential to the success of the business, and that at times it was advantageous to the company to keep secret, until they actually were installed, new methods that might directly affect workmen by imposing changed tasks and responsibilities upon them. He feared that the management's freedom in introducing changes would be restricted if the employee representatives had the right to question and debate all proposed management action which directly affected them.

He stated that in his opinion the acceptance of this position by the employee committeemen would not impair their prestige or reduce the favor in which the plan of employee representation was regarded by the workmen. He did not hold this decision inconsistent with the past practice of the management in asking the employee representatives' aid in efforts to improve production and to reduce waste, although these might be regarded as employee participation in managerial programs. The manager, in effect, drew a line between policies projected and those in force. The management could introduce either for discussion, but could limit the discussion of projected policies; the employees could discuss policies in force without restriction and could recommend their modification.

Questions

1. What considerations should determine the scope of the authority of the works council?
2. Was the management of the company justified in its insistence upon the works council's confining itself to discussions of methods and policies in force?
3. Was it essential to the efficient functioning of the works council that it be allowed to share in the consideration of projected plans?

56. ROCHESTER MEN'S CLOTHING INDUSTRY

Relations With Labor Unions

In the spring of 1921, the local representatives of the Amalgamated Clothing Workers' Union asked the arbitrator in the Rochester men's clothing industry to require an employer to discharge an employee whom the union had dropped from its rolls for nonpayment of dues. The act of expulsion had not caused the delinquent workman to pay his dues to the union.

On April 1, 1919, this employer, together with practically all the leading men's clothing manufacturers of Rochester, New York, had entered into an agreement with the Amalgamated Clothing Workers' Union. The agreement established terms of employment in the Rochester clothing factories operated by the employers. In 1920, that agreement, with some minor changes, was renewed for two years. The agreement established arbitral machinery for the settlement of disputes. It did not require or establish either the preferential or the closed union shop.

In the main, the men's clothing industry in Rochester was carried on in large plants. The industry there had become known for the quality of its merchandise. Some of the Rochester clothing companies sold their products under their own brands and through exclusive agents. In 1890, a number of the clothing companies had organized an association, known as the Rochester Clothiers' Exchange, as a means for establishing the prestige of Rochester as a men's clothing manufacturing center, and also as a means for acting upon labor questions.

With the exception of the cloth cutters, the men's clothing workers in Rochester did not form a successful union until 1918.

When the industry originally was started in Rochester, the work-force consisted largely of Germans, but subsequently Italian and Jewish immigrants outnumbered the German workers.

Prior to 1914, the one labor organization in the men's ready-made clothing industry was a national union known as the United Garment Workers of America. In 1913 the United Garment Workers alleged that Rochester clothing manufacturers were doing work for New York companies. The latter were then fighting a strike called by the United Garment Workers. Union organizers arrived in Rochester to enlist the support of workers there and to persuade them to cease working upon garments being made for manufacturers in New York City. After a brief and intensive organizing campaign a test strike was called at one plant, and the organizers found the workers' sentiment to be in favor of aggressive action. Presently, they called a strike in all shops in Rochester and demanded various concessions, among them recognition of the union. This strike lasted two months. Acts of violence occurred during the strike. Its settlement was negotiated by the union organizers and the employers, but the terms of the settlement did not recognize the union organization and it disintegrated shortly thereafter.

In 1914, the Amalgamated Clothing Workers' Union was formed by a group which seceded from the United Garment Workers of America. The Amalgamated Clothing Workers' Union since that time has been made up largely of Jews, Italians, and members of other South and East European immigrant races. The Amalgamated Clothing Workers' Union made rapid progress. Some of its members, from experiences in their native countries and knowledge of philosophies in vogue there, endorsed theories of solidarity and direct action which were in sharp contrast to doctrines of individualism and deliberative progress. Its leaders, on the other hand, and many other members were far-sighted and constructive. Although they endorsed militant unionism, they endeavored to adhere to the agreements which they signed.

In 1918, the Amalgamated Clothing Workers' Union determined to organize the Rochester clothing workers, and sent a special organizer to that city. Two months after the organizer had begun his work in Rochester, two strikes for increases in wages occurred in separate Rochester plants. The strikes threat-

ened to involve the entire Rochester market, which then was working to full capacity on army uniforms. The national president of the Amalgamated Clothing Workers' Union came to Rochester two days after the walkouts occurred. In negotiations with the employing companies, he agreed that the strikes should cease and that the matters in dispute should be arbitrated by disinterested parties to be appointed by the United States Army quartermasters' department, with which the companies had contracts for the production of the army uniforms.

The arbitrators appointed for this purpose rendered a decision of serious moment. Their decision covered all firms in the Rochester clothing industry that were engaged in contracts with the War Department, and not merely the two firms involved in the strikes. In this decision, made in order to standardize wage rates in the Rochester market, the arbitrators awarded a general wage increase of approximately 15% ; they announced that overtime work should be paid for at one and one-half times regular rates ; and they established a minimum wage of \$12 a week. Of no less consequence than the general applicability of the award was the statement that "the arbitrators will continue to make further adjustments in wages in the direction of standardization." To carry out this intention the arbitrators chose a man to represent them as a resident arbiter. He was to continue the work of standardizing wages in the Rochester clothing market.

After approximately eight months of experience with the arbitral arrangement, the president of the Rochester Clothiers' Exchange stated in his annual report that the arrangement "emphasized the necessity of more adequate machinery for the administration of any agreement between the manufacturers and their employees, and the fact that it was impossible to negotiate effectively with the employees as an unorganized body." He went on to say, "If only as a matter of convenience, it is easier to deal with one man than with 10,000, and when the added weight of the discipline which a well-organized union wields among its members is thrown into the balance, the recognition of an employees' organization becomes imperative."

At the outset of 1919, the New York branch of the Amalgamated Clothing Workers' Union demanded a reduction in working hours per week to 44, and the organization stated that it purposed to establish that standard in every center of men's clothing

manufacture. The Rochester manufacturers, anticipating the success of the union in this demand, announced that they would establish a 44-hour week on May 1. The workers regarded this announcement as a direct result of the strength of their organization, and they decided to use that strength to obtain the concession at an earlier date. The mass meeting at which the action was decided upon evidenced great enthusiasm, determination of purpose, and a sense of organized power. The Rochester manufacturers noted with some apprehension the spirit of unrest and new-found power among the unionists, and requested the president of the Amalgamated Clothing Workers' Union to come to Rochester for a series of conferences. The result of those conferences was the labor agreement of 1919. That agreement was renewed a year later with slight changes. The text of the 1920 agreement follows:

I. This agreement made between the members of the Clothiers' Exchange of Rochester, New York, as individuals acting through the said exchange as their representative, and the Amalgamated Clothing Workers of America shall become effective after ratification by the members of both parties, and the fact of such ratification shall be indicated by an exchange of notes between the president of the exchange and the president of the Amalgamated. The agreement shall continue in force until May 31, 1922.

II. The right of the workers in the industry to bargain collectively is agreed to and the Amalgamated Clothing Workers of America is recognized as the agency for collective dealing with the employees. The employees in every shop shall elect representatives to take up their cases with the management in the first instance. If the shop representative cannot agree with the management, then the union representative shall be called in. The employers shall appoint duly authorized representatives of the management, who shall be responsible for carrying into effect the terms and conditions of the agreement in their shops.

III. The power to hire shall remain with the employer, but in cases where discrimination on account of union membership is charged, the impartial chairman [Section VIII of agreement] shall have the right of review; and if facts are brought before the impartial chairman that appear to indicate that the labor policy of any house is calculated to undermine the union, he shall have the power to review that policy.

IV. The power to discharge and suspend employees remains with

the employer, but it is agreed that this power will be exercised with justice and due regard for the rights of the workers; and if any worker feels that he has been unjustly treated in the exercise of this power, he may appeal to the labor adjustment board hereinafter mentioned, which shall have the power of review in all such cases.

V. The right of the employer to make changes in shop management and methods of manufacturing is recognized; such changes to be made without loss to the employees directly affected.

VI. There shall be no strikes, lockouts, or stoppages in any shop covered by this agreement.

VII. The principle of equal division of work is recognized, and during slack seasons work shall be divided as far as practicable among all the workers in the shop.

VIII. The administration of this agreement is vested in a labor adjustment board consisting of representatives of the employers and of representatives of the workmen, together with an impartial chairman selected by both parties. The representatives of the employers and the representatives of the workmen upon this board shall have an equal vote, regardless of the number of representatives of either side, and in case of a tie vote, the impartial chairman shall cast the decisive vote. All disputes or differences over questions arising under this agreement which the parties hereto are unable to adjust between themselves shall be referred to the labor adjustment board for adjustment or arbitration. This board shall have full and final jurisdiction over all such questions and its decisions shall be conclusive, except as may be otherwise provided by agreement of the parties hereto. Except where the board itself shall otherwise determine, the chairman of the board shall be authorized to take original jurisdiction of all cases and controversies arising under the agreement, and to adjust or decide them in accordance with rules of practice and procedure established by the board. Decisions of the chairman shall be binding on both parties. . . .

IX. The board shall have authority to make such rules, regulations, and supplementary arrangements not inconsistent with this agreement as may be necessary to carry into effect the principles of this agreement, or to apply these principles to new questions whenever they arise. It may also define, describe, and limit the penalties to be imposed for violation of any of the provisions of this agreement.

X. The expenses of the labor adjustment board shall be borne equally by both parties to this agreement.

XI. Upon the petition of either party the labor adjustment board shall have the power to determine whether important changes have taken place in the clothing industry, or in industrial conditions gen-

erally, which warrant changes in general wage levels or in hours of work; and if it is decided that such changes are warranted, negotiations shall begin between the parties hereto. In the event of a disagreement, the question shall be submitted to arbitration.

XII. Upon the petition of either party, any adjustment of wages of individuals or sections that may be necessary in order to remove serious and unjust inequalities in pay may be made at any time during the life of this agreement, provided that no request for such adjustment shall be heard by the impartial chairman until he has been authorized to consider it by the labor adjustment board. A decision by the impartial chairman in such a matter shall take effect and operate during and after the first full week after the date of the decision unless the parties otherwise agree.

XIII. A minimum wage for all beginners in the industry and a probationary period during which the employer shall be free to discharge such help without question shall be fixed by the labor adjustment board.

XIV. The regular hours of work shall be 44 per week, to be worked 8 hours on the 5 days preceding Saturday and 4 hours on Saturday.

XV. For work done in excess of the regular number of hours per day, overtime shall be paid at the rate of time and one-half.

XVI. The labor adjustment board is authorized to exercise sanitary control over shops covered by this agreement, and it shall have authority to make regulations designed to protect the health and safety of the workers in the shops.

XVII. It is agreed that homework shall be abolished and the labor adjustment board shall investigate and work out procedure to this end.

Early in 1921, the issue of this case arose. The union, through the impartial chairman of the Labor Adjustment Board, asked one firm to suspend a man from employment until he met his financial obligations to the labor organization. The union previously had suspended the man from its membership. The union also had requested the employer to suspend the worker from employment, but the employer had refused to do so. The employer said that he had hired the worker without regard to union affiliations, and that the agreement did not provide for the closed shop nor did it require him to discharge an employee at the request of the union.

This case was argued during a period of business depression. The incident occurred in the middle of the then current union agreement. An election of local union officials was taking place.

Moreover, the union was trying to collect a special assessment for the benefit of its New York members on strike. The New York strike was the result of the initiative of the employers there who had demanded more favorable terms from the union in December, 1920. The union said that the New York employers wished to destroy it, and the union determined to fight the employers' demands with all the power at its command.

The rules of the Amalgamated Clothing Workers' Union regarding withdrawal and reinstatement were substantially as follows:

Members employed must pay dues monthly, and no member should be permitted to work on the first day of the month unless dues are paid for the previous month. Members three months in arrears shall stand suspended and members six months in arrears shall be dropped from the roll.

Any member dropped from the roll can be reinstated only by paying the regular initiation fee, together with all the money due the organization at the time his name was dropped from the roll.

Any member desiring to leave the country or quit the trade shall be allowed to withdraw from membership by paying all debts to date of withdrawal, surrender of his membership book or card, and written notice of his withdrawal to the local union. The surrendered book or card shall be sent to the general secretary.

No person who has been expelled, suspended, or stricken from the roll or rejected by any local union shall be eligible for membership until all matters are settled to the satisfaction of the local union having the grievance against the person.

A year earlier, about the time the renewal of the 1919 agreement was under discussion by the union and the employer groups, a similar request had been made by the union. In that case, referred to as Docket No. 149, the union had imposed no direct disciplinary measure, but had asked the impartial chairman to require the employer to discharge the delinquent. This the impartial chairman had refused to do.

In the present case, dealing with the union's request for employer assistance in the collection of dues, the impartial chairman ruled (May 26, 1921):

It appears that the man in question joined the union shortly before he left the employ of one of the exchange houses² to engage in busi-

² "Exchange house": Firm which was a member of the employers' association and a party to this labor agreement.

ness for himself. After about a year and a half he returned to work in a contract shop³ and the union then asked him to pay back dues which it claimed he owed. He refused to do this, and he says he quit the job of his own accord while the union representatives contend that he was discharged for refusing to pay dues. Later he worked at another house for about five days and was discharged when he again refused to pay his back dues.

Section IX of the agreement provides that the labor adjustment board may define, describe, and limit the penalties imposed for violation of any of the provisions of the agreement. It is understood between the parties at the time the agreement was signed that this provision should cover the attempts of individual members to evade the responsibilities which the acceptance of the agreement imposed on every individual covered by the agreement. The union is required by Section X of the agreement to pay half of the expenses incident to its administration and these payments must be made out of dues paid to the membership covered by the agreement. The dues are the taxes required to maintain the governmental agencies for the industry set up by the agreement and any individual in whose behalf the agreement was signed who avoids the payment of the tax is violating an obligation assumed by him when the membership of the union voted to accept the agreement.

In case No. 149 it was held " . . . that the union must have power to discipline its members. If it cannot do that, then it cannot force them to live up to agreements made by the union with employers. However, in meting out discipline to its members the union must do it according to the laws of its own organization. It can fine them, reprimand them, suspend or expel them, and impose any other penalty authorized by the union's constitution and by-laws which they agreed to obey. But to make suspension by the employer a penalty imposed by the union, is going beyond the union's power of discipline and asking the employer to act in the union's place."

In that case the union had not suspended or expelled the member, but instead asked the employer to discharge the man as a measure provided in its own constitution and by-laws for disciplining its members. In the present case, however, all efforts have been made by the union to mete out discipline according to the laws of the union, and the member had been suspended.

The question now arises: If the union attempts to discipline a member for failing to meet obligations incident to the agreement and he refuses to accept the discipline, so that the union is compelled to

³ "Contract shop": A shop of a manufacturing subcontractor in the clothing industry.

suspend or expel him, can he continue to work in a shop covered by the agreement, or does the agreement require him to accept the discipline of his organization?

If the union had not bound itself by the agreement to engage in no stoppages, its members would be free to refuse to work with any one who was suspended or expelled from the organization according to its legitimate rules. This would be the next step taken by the organization under its rules for disciplining members after one of them had been suspended or expelled. At this point, however, the agreement interferes and takes away the disciplinary power that the organization had in refusing to work with a member who has been expelled. The agreement prohibits the members from stopping work to enforce its discipline.

Since the agreement ties the hands of the union in this respect, it must afford the organization a legal method of enforcing its just disciplinary measures which will be as effective as the refusal of its members to work with an expelled member. The adjustment machinery must provide a place in court where the union can take up a grievance of this kind instead of engaging in a stoppage. Unless such legal method of enforcing disciplinary rules is provided, the agreement would have the effect of weakening the union, members could defy the organization with impunity, and the attempts of the labor adjustment board to hold the union responsible for compelling its members to live up to the provisions of the agreement and to the decisions of the impartial chairman would be futile.

The rules adopted by the labor adjustment board for handling all cases arising under the agreement must therefore be held to apply to cases of this character also. Whether a member is suspended by the union for nonpayment of dues or for violation of the agreement or a decision, the procedure should be the same. The union may file a complaint with the employer that the member has been so suspended, and if the suspension was regular and not in violation of the agreement, it is the duty of the labor manager to suspend the member from work until he has obeyed the proper disciplinary measures imposed on him. If the labor manager has reason to feel that the disciplinary action taken by the union has not been regular in accordance with its own written rules or has been in violation of the agreement, then the labor manager may refuse to suspend the worker until the impartial chairman has reviewed the disciplinary action taken and finds it to be legal according to the union rules and in conformity with the agreement existing between the employers and the union.

In the present case, the suspended member has failed to appear before the union membership committee that handles such cases and

has refused to agree to pay back dues. Under the circumstances the union could do nothing else but suspend him. This action of the union was wholly legal and proper, and under the circumstances, it must be held that the employer must suspend the member from work until he arranges some settlement of his arrears in dues with his organization. The union, on the other hand, ought to be lenient about insisting on full payment of back dues because the man was out of the industry for a considerable time and it is apparent that he did not understand the union rules about getting a withdrawal card. A proper regard for the rules of his organization on the part of the man and a proper allowance for the ignorance of the man on the part of the union is all that is needed to settle this case.

Questions

1. List the principal rights of the clothing workers' union which were acknowledged by the employers in the 1920 agreement.
2. What was the advantage to the Rochester clothing industry of having all competent employees in good standing with the union?
3. Was the Amalgamated Clothing Workers' Union reasonable in insisting upon a firm's suspending a man from employment until he paid his dues to the union? Was the union interfering with the management of the manufacturing firm?

PART V
MARKETING

CHAPTER XIX

DISTRIBUTION CHANNELS¹

57. JAMES McPHERSON

Marketing Functions

In the spring of 1921, grain and live-stock prices were at a low point, and Mr. McPherson, an Illinois farmer, suffered heavy losses in selling these products. At that time several articles were published in farm papers advocating the elimination of the "middleman" in order to give producers a larger share of the profits—the same sort of article that frequently had appeared in earlier years. Some of the methods proposed, which required the building up of large organizations among farmers, who were not accustomed to working together, did not seem practical to Mr. McPherson. He did become interested, however, in the suggestion that each farmer market his own garden and dairy produce by parcel post. Several years previously the United States Department of Agriculture had issued several bulletins on the marketing of cheese, butter, eggs, berries, garden truck, and fruits by parcel post. The method seemed simple, and Mr. McPherson decided to try out the plan.

The McPherson farm of 120 acres was located on the Chicago, Milwaukee & St. Paul Railroad about 30 miles west of Chicago. Although a large part of his land was in grain, Mr. McPherson sold milk for shipment into Chicago, and he sold a substantial quantity of eggs, butter, fruit, and garden truck to local shippers. For these products he estimated that he received about one-third or one-half the retail prices at which they were sold eventually in Chicago. When he had protested to the local produce buyers that he was receiving "the short end of the

¹ DUTTON, pp. 392-450; MARSHALL, 262-268, 279-296, 303-318; MAYNARD, WEIDLER, and BECKMAN, 35-109, 131-307.

deal," it was explained to him that all produce had to be graded, packed, and shipped to Chicago, where it was sold to large wholesalers who stored the produce in warehouses until such time as it was wanted by the jobbers. The latter, in turn, sold to retailers, who finally sold and delivered the goods to consumers in Chicago and its suburbs.

This experience helped to convince Mr. McPherson that it would be advantageous for him to market foodstuffs by parcel post. He therefore increased his production of eggs, butter, garden truck, and fruit, and secured a supply of small mailing cases, such as were recommended in the bulletins of the Department of Agriculture. He then advertised in the local papers of the Chicago suburbs and by post card that he was able to supply fresh produce directly from the country at prices the same as those charged for inferior goods by the grocery stores.

At first the response was gratifying, and Mr. McPherson had more orders than he could handle, but after a few months, in spite of all the advertising that he had done, his sales were cut in half. One day early in 1922, he called on several of his former customers to ascertain the reason for the decline in orders. Some of these customers told him that it took several days to have an order filled from the farm, and that they seldom could remember to order goods until their supplies were exhausted; then they purchased at the nearest stores. Others said that almost always one or two eggs were broken, or the top layer of a box of fruit was crushed, and although they knew he had offered to make this damage good, it was too much trouble to have it done. Several stated that the stores carried produce good enough for them, and that they disliked being bothered with ordering by mail. Still others said that prices were coming down and that several times they had paid more for Mr. McPherson's produce than they would have been charged by the local stores; although they knew that foodstuffs from the country were fresh, they did not care to pay fancy prices. A few said that they did not see why they should pay a farmer as much as they would pay a storekeeper, since the farmer did not furnish immediate delivery service or other conveniences. They stated that numerous farmers had grown rich on the high grain and food prices during the war period and that now "the farmers thought they could rob anyone who came along."

On returning home, Mr. McPherson figured his costs of carrying on a parcel post business. He found that he was paying from 5 to 7 cents for each small-sized container, in addition to the postage. At first he had tried to buy durable containers and have the customers return them, but few were willing to be bothered to that extent. Frequently the crates became stained from use, and customers objected to receiving goods in unsightly, second-hand containers. Instead of the profits he had expected, he had made no more by marketing produce by parcel post than he had made in an average year in the grain and dairy business, and in addition he had had the worry and bother of dealing with unreasonable customers. Mr. McPherson had put so much effort and money into increasing the production of eggs, butter, and garden truck and in arranging to market them by parcel post, however, that he was reluctant to give up the experiment, at least until he had made sure that he had tried out the right methods for building up his trade.

Questions

1. List the functions which the local buyers, the shippers, and the consuming-area wholesale and retail distributors perform in the marketing of produce such as eggs, butter, garden truck, and fruit.
2. What does Mr. McPherson's experience prove, if anything, regarding methods of distribution of farm produce?

58. KEANE MOTOR CAR COMPANY

Distribution Channels

In 1922, the Keane Motor Car Company was convinced that, in order to increase its sales, it should change its method of marketing. Two plans were suggested: (1) selling directly to retailers from the factory; and (2) establishing wholesale distributing branches.²

² The marketing methods employed by the foremost manufacturers of farm implements in the United States are illustrated in the following statement of the policies of a typical company.

This company originally was established to manufacture grain binders, reapers, rakes, mowers, and other harvesting implements. In order to smooth out the seasonal peak of production, however, the line was rounded

The firm manufactured a high-grade eight-cylinder car, in both open and closed models, which sold at retail for \$2,500 to

out by the addition of tillage implements of all kinds, including plows, harrows, rollers, cultivators, corn planters, drills, and other similar machines. Later the company added to its list of products until they included grist mills, corn huskers, farm wagons, ensilage cutters, cream separators, stationary engines, tractors, and motor trucks; the manufacture of garden implements and small tools, however, was not undertaken.

The company had 93 wholesale branches in the United States from which sales were made directly to retailers. The country was divided into 5 districts: the central, eastern, southern, southwestern and northwestern districts, with a sales manager in charge of each district. The general sales manager was located at the home office, while each of the district sales managers continually travelled through his district and only periodically visited the home office. In each sales district were several branches with exclusive territories; there were no open competitive districts between branch territories. Branch managers and their employees were directly responsible to the district manager and through him to the general sales manager.

Each branch manager divided his territory into blocks, with a salesman, known as a block man, in charge of each block. The block man was responsible for the sales of the company's whole line of implements in his block, which usually included several counties. The block man made annual contracts with retailers in his territory, only one retailer in each locality being given a contract. Each branch also had an advertising man, a credit man, clerical and warehouse employees, and service men. In addition to the block man in each branch territory, a missionary salesman usually concentrated his efforts on motor trucks, and in dairying states another concentrated his efforts on cream separators. Each branch carried stocks of repair parts and was equipped to send out experts to render service on the company's implements. So far as possible, retailers were trained to render service of this sort, but whenever a piece of farm machinery broke down and the retailer could not remedy the difficulty, the branch endeavored to have one of its experts on the job within a few hours, or a day at the longest.

The company had found it essential to extend long-term credits to farmers; in some cases credits ran as long as two years. It was customary for the company to accept farmers' notes which had been endorsed by retailers. The credit man in each branch territory kept closely in touch with local retailers and reported directly to the credit and collection department at the main office.

In 1922 the United States and Canada were fully covered by the company's branches, and none of its products were sold to wholesalers. Although the branches carried stocks, shipments frequently were made from factories directly to retailers. All goods were billed through the branches, even when they were shipped directly to retailers.

\$4,250. The annual output of the company was 3,000 automobiles. These automobiles were sold through 40 distributors. Besides selling Keane cars at retail in the city where the distributor was located, each distributor served as wholesaler for an allotted territory which in individual cases ranged in size from 12 counties to 3 states. Each distributor selected the retailers to whom to grant Keane agencies in his territory. In 1922, Keane cars were sold by 350 retailers in addition to the distributors. Of the total number of dealers and distributors, all but 20 also sold cars which were lower in price than Keane cars. The discount to distributors was 30 or 35% off the retail list prices; the higher discount had been granted to only a few distributors.

In order to obtain intensive solicitation and to standardize the service given to owners, a few other automobile manufacturers were changing their methods of wholesale distribution. The Rose Motor Company, which manufactured a line of six-cylinder cars ranging in price from \$1,500 to \$2,300, had established wholesale branches. The Frink Motor Company, with a car in the price class of the Keane car, in 1920 had recalled all distributors' contracts and established its own wholesale branches. In 1922 it was reported that this company was attempting to reestablish a system of distributors. The failure of the experiment of the Frink Motor Company was attributed to the inferior performance of its car rather than to the distributing method. In fact, it had been rumored that the company had been forced to establish its own branches because of the difficulties experienced by distributors in inducing retailers to handle its car. Toward the close of 1922 one of the largest manufacturers of popular-priced cars was stated to have begun establishing wholesale branches; this company had produced six-cylinder cars in light and heavy models.

The experience of the Keane Motor Car Company had been that often a distributor did not spend enough time on the selection and education of retailers in his allotted territory; his efforts were directed principally at increasing his own retail sales. The company, furthermore, had little control over the standards of service rendered by retailers, and could not insure uniform treatment to Keane owners. One of the advantages in selling through distributors had been, originally, the financial

assistance obtained from the advance payments, or at least payments on delivery, made by the distributors for the cars ordered. During 1920, however, this method of payment had been changed because of the stringency of credit among distributors and retailers, and beginning in that year the company had shipped all cars on consignment.

If the company were to establish wholesale branches, a large financial outlay would be required in order to obtain suitable locations and to stock each branch with a full line of cars and parts. The company had one wholesale branch which had been established in order to maintain continuous representation in a large city after the financial failure of the authorized distributor. Operating costs of this branch had been higher than those of distributors, but the company's good will had been augmented, it was stated, through the excellence of service rendered.

The company would experience more difficulty in controlling and standardizing the service given consumers by dealers if it sold directly from the factory than if it sold through wholesale branches. The direct-to-retailer plan, however, could be expected to encourage intensive solicitation by the retailers, since the discount allowed to them by the company would be higher than under a system of wholesale branches. If no branches were established, it was probable, furthermore, that many of the 40 distributors could be induced to continue to sell Keane cars at retail in their respective localities.

Neither plan, in its entirety, could be put into effect immediately. If factory branches were decided upon, the transition necessarily would be gradual, and might be deemed a menace by the distributors not affected at first, thereby causing them to give up their Keane contracts prematurely. The company accordingly decided to sell directly to retailers from the factory, putting the policy into effect gradually; so long as a distributor was securing satisfactory results from the dealers in his territory, he would be permitted to continue to act as a distributor.

Although the direct-to-retailer plan made possible more intensive cultivation of several territories, it was difficult to persuade small retailers to stock adequate supplies of parts for repairs. It appeared, furthermore, that the distributors whose contracts were not taken away began to pay more attention to the development of their wholesale business.

Questions

1. What plan of distribution should have been adopted by the Keane Motor Car Company?
2. Would your answer be the same if the car were in the \$800- to \$1,500-price class and 100,000 were sold each year?
3. What changes in the automobile industry have resulted in the adoption of new distribution channels?

59. PACIFIC WHOLESALE DRY GOODS COMPANY

Wholesale Distribution Channels

The Pacific Wholesale Dry Goods Company operated in the extreme southwestern part of the United States. With the possible exception of one other company, it was the largest unit of its kind in the district. The depression of 1920-1921 had checked the rapid growth of the company, but the losses of that period were not so heavy in the Pacific Southwest as they were in other parts of the United States, as a boom was getting under way there. Increasing difficulty was experienced in securing desired sales volume, however, and in 1926 and 1927 heavy losses were shown. Bank-loan maturities could not be met, and the officers of the company joined efforts with representatives of the banks and of other large creditors in order to reestablish profitable operations.

The Pacific Wholesale Dry Goods Company carried a full line of dry goods, even during the years when operations were becoming unprofitable. In quality the line included all grades of articles distributed by the retail dry-goods stores in the area served. These retail agencies ranged from high-grade department and specialty stores to general merchandise stores.

The district in which the company operated had a population of approximately 2,000,000 people living in an area roughly 400 by 600 miles. This population was fairly evenly divided between the urban-industrial class and the suburban-agricultural class. In the area there were two cities with a population in excess of 250,000, two of approximately 100,000, ten of approximately 25,000, and the balance was scattered for the most part in semi-centralized agricultural units throughout the area.

The Pacific Wholesale Dry Goods Company sold to all retail

dry-goods outlets. These included the general merchandise stores, the small-town dry-goods, department and specialty stores, and the medium- and low-grade stores in the larger cities which handled dry goods. Previous to 1920 frequently sales were made to the high-class city stores, but this trade had fallen off until it came to be of a fill-in nature, for only a few lines.

The company used the most aggressive methods of distribution and for several years enjoyed the reputation for being the most progressive company in the wholesale dry-goods business of the Pacific Southwest. The best salesmen were employed, and each was provided with a specially built express truck in which samples were carried. About 12 of these units were kept in the field at once, working in different areas. Practically all possible outlets for dry goods were visited at frequent intervals. The area could not have been covered more effectively.

Subsequent to the general cyclical expansion of trade ending in 1920, a new normal emerged in many lines of business. The unusual elements attending and following the war gradually cleared away and five new factors were present in the markets for most goods. Briefly they were as follows:

1. The growth of retail distribution centers at the expense of stores in villages and small towns. This situation was the result of improved automobile transportation, which enabled people to go to the larger distribution centers where they could shop to better advantage than in the small centers. The large department and specialty stores in the more populous areas drew their customers from an increasing radius.

2. Direct selling by manufacturers. This was brought about by the increasing tendency of large retail distributors to go direct to manufacturers to get special prices on large orders. The manufacturer frequently undertook direct sales because he had national distribution, because the line made was large enough to bear the expense of direct selling, and because the competitive situation often made it necessary for him to push the sales of his product upon the retail outlets.

3. The rise of specialty dry-goods wholesalers. In several lines, such as draperies, there arose a wholesaler who restricted his operations to a particular line. In certain cases he was able to perform the distribution function better than the general dry-goods wholesaler, with the result that the latter functionary

lost part of his market. Frequently the business lost was a high-margin business.

4. The growth of buying associations. Retail distributors too small to secure large-quantity discounts would associate themselves for purposes of pooling their purchases of certain groups of articles. These associations would go around the general dry-goods wholesalers.

5. The chain-store movement. Many independent department, dry-goods, and specialty stores were becoming units of chain systems. The purchasing activities for these groups were centralized in large measure in an office which frequently dealt directly with manufacturers, selling factors, and importers. Occasionally the chains made recourse to wholesalers, such as the Pacific Wholesale Dry Goods Company, but the business was scarcely profitable, as the chains customarily were able to secure very low prices.

An analysis of the sales of the Pacific Wholesale Dry Goods Company would have shown these tendencies and changes. The lines carried might have been adjusted to the new situation and the sales efforts might have been reorganized. In spite of the changes, a definite market remained for the general dry-goods wholesaler to serve. There was the remainder of the business of the general stores and of the small-town dry-goods stores, the fill-in orders of the larger stores and buying associations, and the orders of the staple dry-goods stores in the larger centers. The nature of this market suggested that a restricted line be carried which would not require high-priced sales methods.

Questions

1. How might the Pacific Wholesale Dry Goods Company have met the situation which resulted in the loss of its markets?
2. What are the marketing functions which must be performed in the distribution of dry goods?

60. NEW ENGLAND DEPARTMENT STORE, INCORPORATED

Promotion of a New Department Store Outside the Shopping District

Early in 1928, plans were announced for the inclusion of the New England Department Store, Inc., as a part of a general office building to be the largest in the world, located in the Park

Square district of Boston (see Exhibit 1). This section, located about two-thirds of a mile from the intersection of Washington and Summer Streets, had had an important development during the previous five years.

In 1928, the main shopping district in Boston was concentrated in a small area, the heart of which was the intersection of Washington and Summer Streets. In this district were the principal department stores and a number of women's specialty shops. On Winter Street (a continuation of Summer Street), and along Tremont Street, between Winter and Boylston Streets, were located several smaller department stores and specialty shops. Exhibit 1 shows a map of the retail shopping districts of Boston, including the newly developed area near Park Square.

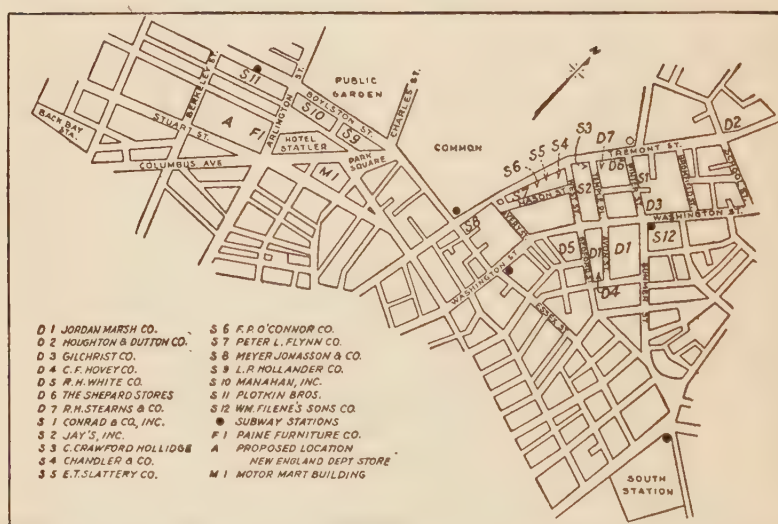


EXHIBIT 1.—New England Department Store, Inc. Map of Park Square and retail shopping district of Boston.

Because of the narrow streets and the limited parking facilities, the city's traffic problem was one of major importance. Jordan Marsh Company, in 1925, had purchased a ten-story garage, about five blocks from its store, in which it kept its patrons' cars free of charge and from which it transported its customers to the store in motor buses. E. T. Slattery Company,

in 1926, had erected a store at Coolidge Corner, Brookline, in the center of a fashionable suburban district easily reached by automobile. The traffic authorities in Boston had cooperated with the downtown merchants and had tried numerous plans of traffic control with varying degrees of success. In 1928, however, traffic congestion was still one of the critical problems faced by merchants in the established shopping district. In spite of the fact that this district was served by the principal subway lines, many people came by automobile into Boston and shoppers were greatly inconvenienced by traffic delays and lack of parking facilities.

Although outside the established shopping district, the Park Square section was in close proximity to many high-grade women's specialty shops along Boylston Street. It was near the Boylston Street subway and the Back Bay, Trinity Place, and Huntington Avenue railroad stations, which served a large territory south and east of Boston. The center of the transportation system of Boston, however, was the Park Street subway station at Tremont and Winter Streets, which connected with the Washington Street subway, the Boylston Street subway and surface cars, the Tremont Street subway, and the Cambridge-Dorchester subway.

The failure of the Siegel Company, in 1914, had been attributed largely to the location of its store outside the established shopping district. The Siegel store had been on the corner of Washington and Essex Streets, several blocks from the other large department stores. Retail stores in this neighborhood had been small and there had been little incentive for shoppers to go to this section of the city.³ The promoters of the New England Department Store, Inc., believed, however, that the advantages of the Park Square location would be sufficient to induce shoppers to patronize the store, even though it was not in close proximity to Boston's largest department stores.

The New England Department Store, Inc., was to operate a department store in the building to be constructed by the New England Building, Inc. The latter company, which held an option until June 15, 1928, for the purchase of the land between Berkeley and Stuart Streets and St. James

³ This case is presented by M. T. Copeland, in "Problems in Marketing," 3rd Rev. Ed., p. 17.

Avenue, had given the New England Department Store, Inc., an option until that date for a 20-year lease of the first 5 floors in the western portion of the building, together with certain basement and other space, subject to the successful financing and construction of the building. The New England Building, Inc., together with the New England Department Store, Inc., was expected to cost approximately \$20,000,000.

The department store was to occupy more than 10 acres of floor space on the first 5 floors and first basement. There was to be space for 20 additional specialty shops on the street floor. The floors above the fifth were to be devoted to sales and display offices and headquarters of New England industries. One of the features of the building was to be a large exhibition hall containing a permanent public exhibition of New England industries under the direction of an expert manager. Direct underground passageways were to be provided to the Arlington-Berkley station of the Boylston Street subway. Modern heating, ventilating, and cooling plants for the whole building were to be installed.

Metropolitan Boston had been growing in population at the rate of 25,000 a year. While hotel, transportation, garage, and entertainment facilities had been greatly increased, there had been no important expansion of Boston's department-store shopping facilities for many years. The following index prepared by the Boston Federal Reserve Bank showed, however, that sales of Boston department stores had not increased so rapidly as those of the specialty shops.

SALES CONDITIONS IN BOSTON *

(1927 = 100)

	1924	1925	1926	1927	1928
Boston Department Stores.....	95	96	100	100	98
Boston Women's Apparel Shops..	79	89	92	100	99
New England Department Stores.	94	96	99	100	98

* *Monthly Review*, Federal Reserve Bank of Boston, February, 1929.

The prospectus of the stock issues for the New England De-

partment Store, Inc., stated that the new department store was justified economically, because:

1. There has been no new major department store in Boston in 15 years to take care of New England's rapidly increasing purchasing power.

2. Boston has one department store for every 102,000 people in its retail shopping area, while the other 9 largest cities in the United States average 1 to every 43,000 people—or more than twice the number that serve the Boston retail area.⁴

3. In recent years, Boston department stores in general have had a great increase in sales and tremendous gains in surplus and profits.

4. Pressure of population and of traffic limits Boston's downtown retail district expansion, thereby necessitating a migration of business from the congested area into new districts where streets are wider, parking space ample, and vehicular movement of traffic more expeditious.

The New England Department Store, Inc., was to be so constructed as to offer special service and shopping conveniences. It would be located where streets were wider, where parking space was more ample, and where traffic moved more freely than in the downtown district. It would provide club quarters for men and women and two sub-basement parking spaces capable of accommodating from 3,000 to 5,000 automobiles a day for the occupants and patrons of the building. The Motor Mart, the city's largest garage, and other garages near-by would provide additional space for cars.

A tunnel was to be constructed to connect the building with a proposed warehouse situated near railroad lines. This warehouse would eliminate the necessity of using large parts of the building for storage; it also would facilitate prompt delivery from the department store and prevent internal-traffic congestion resulting from the delivery of goods from within the building.

The New England Department Store, Inc., stated that it had engaged an independent organization to interview women in nearly 2,000 representative homes in widely scattered neighborhoods and in various types of residential districts in order to

⁴ Data from *Retail Shopping Areas*, 1927, J. Walter Thompson Co.

obtain unbiased opinions regarding department stores in Boston. The results of the survey were as follows:

1. Sixty-seven of every 100 named the Park Square district as the most convenient general location for the proposed department store.
2. Seventy-five of every 100 said they would eagerly welcome and patronize such a store.
3. Seventy-five of every 100 said they believed such a modernized department store would immediately enjoy a profitable volume of business.

Sears, Roebuck & Company, the largest mail-order company in the United States, in 1928 established two Class A department stores, one on Brookline Avenue on the southwest side of Boston, and the other on Massachusetts Avenue at Porter Square, Cambridge. Both of these locations were on the outskirts of the city on main thoroughfares easily reached by automobile. Because of Sears, Roebuck & Company's prominence and its established reputation for high values at low costs, these stores were expected to secure a large volume of retail business.

Question

1. Do you believe the New England Department Store, Inc., would be successful if located in the Park Square district of Boston? What are the advantages and disadvantages of such a location for a large department-store undertaking?

61. RARITAN OIL AND REFINING COMPANY

Retail Distribution by Manufacturers

The Raritan Oil and Refining Company had developed a reputation for the reliability of its gasoline and lubricating oils through extensive local and national advertising. The company was established in Pennsylvania in 1902 and grew so steadily that in 1922 Raritan gasoline and oils were sold throughout the territory east of the Mississippi. One of the last sections to be entered was New England, where the company found competitive conditions worse than in any other district. Because of the system of leasing pumps and the substitution by dealers of cheaper grades of gasoline, which were the most common objectionable practices, one refining company had begun to install its own filling stations.

In order to introduce its products in New England, the Raritan Oil and Refining Company found it necessary to follow its competitors' policy of leasing pumps at a nominal sum. Refining companies usually charged dealers \$1 a year for a pump. The cost of a 5-gallon pump and the accompanying tank of 10-barrel capacity was \$500, and installation costs were \$100. The average life of a pump was 5 years. At first the company refused to lease pumps in locations where reasonable returns evidently could not be made on the investment, or where Raritan gasoline would have to compete with one or two other brands in the same filling station or garage.⁵ It had become impossible to adhere to this policy, however, since other firms were leasing or lending pumps indiscriminately.

Trouble developed later through the substitution of inferior grades of gasoline for the Raritan brand. Small refining companies and wholesalers induced some of the lessees of Raritan pumps to substitute their gasoline, which yielded the dealers a higher profit. These dealers then sold this gasoline from pumps supplied by the Raritan Oil and Refining Company, and the poor performance of the cheaper grades reacted against the Raritan brand. Whenever the company learned that one of its dealers was practicing substitution, it removed his pump, but in occasional instances this practice was carried on long before the offenders were discovered.⁶ Substitution of one brand of lubri-

⁵ It was a policy of one oil-refining company, which sold at wholesale and retail approximately half the gasoline used in an eastern city with a population of several hundred thousand, not to locate a retail filling station in the same district in which a competitor operated one, unless the district could support two stations, or unless the service and appearance of the competitor's station were decidedly below the standard which the company maintained. The company located its stations on the right-hand far corners of street intersections, as determined by the direction of the heaviest traffic, and usually on main thoroughfares where the traffic averaged approximately 300 automobiles per hour. Streets on which the traffic averaged more than 2,000 automobiles per hour were considered undesirable locations for filling stations.

⁶ In 1925 the Tide Water Oil Company, producer of Tydol gasoline, found that in some instances as much as 70% of the gasoline sold from pumps which it had leased to retail dealers in New York City was not Tydol, but substitutes. Monthly sales of Tydol in New York City in the fall of 1925 were many thousand gallons less than in the fall of 1924. The company decided that the only sure way to prevent substitution was

eating oil for another was even more prevalent, and also more difficult to detect.

The company faced the question of whether it should put in its own system of filling stations to alleviate these troubles. Erection of its own system would require a large outlay of capital by the Raritan Oil and Refining Company, since real-estate prices for stations ranged from \$1,200 to \$40,000 each, and the cost of buildings varied from \$5,000 to \$40,000. One refining company with its own system of filling stations had built two or three stations at a cost of \$65,000 to \$75,000 each; and, although these stations would not yield a reasonable return, it was believed that their advertising value justified their existence. Another refining company, which operated retail filling stations in an eastern city with a population of about 500,000, estimated that if a filling station sold from 400 to 500 gallons of gasoline per day, a gross margin of three cents per gallon would enable it to meet operating expenses and overhead charges and to show a reasonable net profit. The stations operated by refining companies had placed more service at the disposal of their customers than was supplied by independent dealers. This service consisted of supplying free air and water, testing spark plugs and lighting systems, and filling storage batteries with distilled water.

It was certain that it would be impossible for the company to discontinue the practice of leasing pumps, unless the number of retail outlets was to be radically curtailed, since the number of

to seal the intake pipe to the dealers' underground tanks from which the pumps were supplied, so that between calls of Tydol trucks no gasoline could be put into the tanks. The seals would be placed so that they readily could be examined by consumers purchasing gasoline. Such a scheme was favored as a protection, not only to the company and to consumers, but also to the large group of Tydol dealers who did not practice substitution. Representatives of the company presented this plan to the company's dealers in New York City, forestalling their objections by showing them the copy for the intensive newspaper advertising campaign which was to be inaugurated immediately and in which the dealers were given much credit for cooperating with the manufacturer in this attack on substitution. More than 98% of the Tydol pumps in the city were sealed; the remainder were removed. The company's advertising campaign secured for the plan the support of the public and the approval of other gasoline producers. The number of Tydol dealers in the city increased by 10%, and sales of Tydol within eight weeks showed an increase over sales in the corresponding period of the preceding year.

stations that the company could afford to establish would be less than the number of dealers to whom it could lease pumps.

If the company built and operated its own filling stations, it might be able, by its advertising and reputation, to induce consumers to seek out its stations, even though other stations were more conveniently located. On the other hand, less dense distribution might serve to decrease sales, since even those consumers who preferred Raritan oil and gasoline might be unable or unwilling to defer their purchases until a Raritan station could be reached. Some refining companies supplemented the distribution which they obtained through their own filling stations by leasing pumps to dealers in areas not covered by these stations.

Questions

1. Should the Raritan Oil and Refining Company have established its own filling stations?
2. What problems would be presented to the company if such a policy were carried out?

62. CHOCOLINK BEVERAGE COMPANY

Choice of Distribution Channels

For three years the Hayden Company had endeavored to secure a market for its product, but with only moderate success. The company manufactured Chocolink, a preparation composed of chocolate, cocoa, vanilla, sugar, and milk, which was sold in powdered form for use in making a hot or cold drink, fudge, frosting for cake, or a filler for sandwiches. The process of manufacture was secret, but could not be patented. In 1923 the company had sold 1,000,000 pounds of Chocolink. Without additional investment, the factory could manufacture 1,500,000 pounds annually.

In December, 1923, exclusive sales rights to Chocolink were granted for 10 years to the Chocolink Beverage Company, a sales corporation controlled by the president of the manufacturing company. The Chocolink Beverage Company considered the relative advantages of marketing the product through wholesale grocers and wholesale druggists, through retail milk distributing companies, and directly to retail grocers and retail druggists.

The Chocolink Beverage Company was capitalized at \$25,000;

stockholders were willing to subscribe \$10,000. To secure additional funds, however, the corporation would have had to apply to other individuals or to banks. Individuals lending to the corporation might have required a controlling interest in it, and the president knew of no bank that would lend to the company until it could show a profitable operating statement. The Chocolink Beverage Company would not maintain stocks of finished product; it was estimated, however, that \$12,000 of the \$25,000 capital would be in accounts receivable or in cash. The remainder was to be utilized for sales promotion. Credit was to be extended to customers for 10 days only.

The Hayden Company had stressed the use of Chocolink as a base for a beverage, because the company had been convinced that that would be the most popular use for the product. The drink was prepared by mixing a small quantity of boiling water with the powder and then adding hot or cold milk or water. The milk content of the powder was 2.5%. The Hayden Company figured that the total cost of manufacturing and packing Chocolink was slightly more than 19 cents a pound. The largest single cost was for materials; about 50% of that cost was for sugar. The powder was packed in one-pound containers for retail distribution.

The retail price of Chocolink in 1923 had been 35 cents a pound; the Hayden Company had sold the product to distributors at 25 cents a pound. According to the contract between that company and the Chocolink Beverage Company, the sales company was to pay the manufacturer 21 cents a pound; 10 days' notice of any change in price was to be given by the manufacturing company. It had been proposed that the retail price recommended by the manufacturer be raised to 40 or 45 cents a pound. No action, however, had been taken on this proposal.

The chief competing product of Chocolink as a drink was marketed in fluid form. After a bottle of that preparation was opened, the preparation spoiled within a week, it was stated by representatives of the Chocolink Beverage Company; whereas, an open package of Chocolink stored in a dry place would not deteriorate for several months. A 40-cent bottle of the liquid preparation, when properly diluted, made approximately one-half as much beverage as a 35-cent package of Chocolink mixed to the same consistency. The liquid preparation was marketed

through retail milk-distributing companies. Another competing product was sold in powdered form. It retailed at 50 cents for 8 ounces and was sold by the manufacturing company's salesmen to retail grocers and druggists. That product, however, was not so soluble a preparation as Chocolink and could not be prepared with cold milk. Chocolink had an advantage over ordinary chocolate and cocoa in that it could be prepared instantly, without cooking.

In 1921 the Hayden Company had made an experimental attempt to distribute its product through wholesale grocers in Connecticut. That state had been chosen because the president of the company had been acquainted with those wholesalers. The company had spent \$3,000 for advertising and in employing specialty salesmen; wholesalers and retailers had purchased the product, but consumers had manifested no interest in it.

After this failure, the Hayden Company had made an effort to secure distribution by granting exclusive agencies to milk-distributing companies. Fourteen such companies had accepted agencies. The product was retailed in one-pound boxes from their wagons. Because the use of Chocolink increased the demand for milk, the Hayden Company had expected that those milk companies would urge their drivers to sell the product. The wages of the drivers were the same whether their wagons were loaded fully or only partially. Consequently, by selling Chocolink, the milk companies lowered unit costs of distributing milk slightly, since existing equipment was utilized and fixed charges were not increased. The 14 companies had sold 1,000,000 pounds of Chocolink in 1923. The more aggressive of those milk companies had succeeded in selling satisfactory quantities of Chocolink and in so doing had increased their sales of milk.

The following excerpts concerning the distribution of Chocolink were taken from the contract between the Hayden Company and the milk distributors:

The company agrees to sell to the distributor as much of said powder as the distributor shall require from time to time during the term of this agreement or any extension thereof for distribution in said territory, and that it will not during said term knowingly sell any of said powder to any other person for distribution in said territory.

The distributor agrees not to distribute or sell any of said powder outside of said territory, nor to sell or distribute any of said powder under trade-mark, trade name, or designation other than Chocolink, and not to use, handle, or sell any other powder, syrup or other preparation used for the same or any similar purpose, during the term of this agreement.

The sales manager of one of the milk companies which had been most successful in selling Chocolink was convinced that the Hayden Company had used the most advantageous method of distribution. That milk company had advertised Chocolink in local newspapers and had displayed signs on its wagons which indicated that a customer could secure Chocolink by ordering it from the driver. The milk company also had undertaken a campaign to increase sales; samples of Chocolink had been distributed and salesmen had called at the houses where the company's milk was delivered; booths for the sale of Chocolink had been operated at trade expositions and at several amusement parks. Sales of Chocolink had trebled in that milk company's territory following this sales promotion, but later they had declined until they were only 50% more than the sales preceding the campaign.

The executives of the Chocolink Beverage Company learned that east of the Mississippi River there were 56 milk companies which would make suitable exclusive agents for Chocolink. If each of those companies ordered 8,000 pounds per month, which was the quantity of Chocolink distributed by one milk company, the annual sales would be 5,376,000 pounds. The executives recognized, however, that drivers of milk wagons could not always be depended upon to make an effort to sell Chocolink. Drivers were paid straight salaries and were interested in distributing milk as quickly as possible. In most localities, because of competition, one milk company did not have complete distribution. The president of the Chocolink Beverage Company stated that many milk companies hesitated to act as agents for Chocolink because they had been unsuccessful in marketing similar products.

As an alternative to distribution through milk companies, it was proposed that Chocolink be sold exclusively to wholesale-grocery and wholesale-drug companies. Under this plan the sales corporation would employ specialty salesmen to introduce

the product to wholesalers and to secure orders from retailers to be filled by wholesalers. When wide distribution to wholesalers had been secured, the Chocolink Beverage Company would undertake a general advertising campaign. If specialty salesmen were necessary after the product was introduced, they could secure orders from retailers for the major part of the retailers' requirements. Wholesalers could fill those orders and could accept and solicit additional orders. The adoption of such a plan might result in national distribution quickly. Products similar to Chocolink were marketed in this way. Since wholesale companies had storage facilities, they accepted quantity shipments; this rendered it unnecessary for the manufacturing company to make provision for extensive warehouse space. The executives of the Chocolink Beverage Company believed that for the most part wholesalers were satisfactory credit risks. The sale of Chocolink at soda fountains, moreover, which would be insured by distribution through wholesale druggists, would have advertising value.

The president of the Chocolink Beverage Company objected to this plan because of the experience of the Hayden Company in distributing Chocolink through wholesale grocers in Connecticut. The average wholesale grocer or wholesale druggist distributed hundreds of different articles; it was his function to furnish those which were in demand rather than to develop a market for new products. The president was of the opinion that since the Hayden Company was not prepared to manufacture enough Chocolink for national distribution, it might be advisable to concentrate sales efforts in limited territories. Production, however, could be increased 50% with an expenditure of only \$2,500 for additional machinery. No extra space would be required. The Hayden Company, furthermore, had another plant which could be utilized for the manufacture of Chocolink if sales increased more than 50% of existing capacity.

By establishing its own sales force and selling Chocolink directly to retail grocers and druggists, the Chocolink Beverage Company would be able to select the retailers to whom it wished to sell, to control distribution and sales effort closely, and to obtain a larger gross margin than could be obtained on sales to wholesalers. The cost of maintaining an adequate sales force would be large, however, and in order to sell directly the com-

pany would have to carry stocks at warehouses and to open accounts with numerous retailers.

The Chocolink Beverage Company also considered marketing Chocolink through chain stores. In that way wide retail distribution might be secured with one or two salesmen, because of the central buying agencies of the chain-store companies. Chain stores usually carried their own reserve stocks and frequently contracted for a year's supply in advance. The number of those stores was increasing, and they were widely patronized. It was the opinion of the executives, however, that as a rule chain stores did not undertake to introduce or to create a demand for new products. It was possible, moreover, that unit stores would refuse to sell Chocolink if its distribution through chain stores proved unsatisfactory.

Questions

1. What distribution channel should be used for the marketing of Chocolink?
2. If Chocolink should become well established in the minds of the public, would you suggest any change in the method of distribution even though the method you recommended for initial operations proved to be successful?

63. CHICAGO BOARD OF TRADE

Commodity Exchange

The grain market at Chicago developed because of the strategic position of that city as a lake shipping point located in proximity to the grain-growing areas. With the development of railways, Chicago continued to be the logical focusing point for the activities of persons interested in buying and selling grain; it remained, however, a storing and shipping point rather than a grain-milling center. In 1922, there were 10 important primary markets for grain in the United States—Chicago, Minneapolis, Duluth, St. Louis, Kansas City, Milwaukee, Omaha, Peoria, Toledo, and Detroit—of which Chicago was the largest, receiving about 400,000,000 bushels of grain each year. Although Chicago had higher total receipts of all kinds of grain than any other primary market, several other cities had larger wheat receipts.

The Chicago Board of Trade began as a voluntary associa-

tion of business men interested in commercial and financial matters, and gradually developed into a market place in which trading was carried on in flour, grain, salt pork, lard, short ribs, and other provisions. The Board of Trade was a corporation holding a charter from the state of Illinois. It did no trading on its own account but furnished its members with market information and with a place to trade, subject to the rules of the board. The individual members traded with one another either as principals or as agents for outsiders.

In the trading room of the exchange there were 52 tables for the display of samples of cash grain. Each table could be used by as many as 4 firms. In the same room were 4 circular "pits" for wheat, corn, oats, and provisions, where trading in futures took place. To facilitate the operations of dealers buying grain in transit, all bids were recorded at a desk and at once posted on a large blackboard. A large number of telephones, telegraph instruments, and tickers, in combination with large blackboards, provided a means of securing and rapidly disseminating market information.

The following classification of the members of the Chicago Board of Trade was made in 1919.⁷

CLASSIFICATION OF MEMBERS, CHICAGO BOARD OF TRADE, 1919

Cash grain trade.....	394	Seeds and miscellany....	14
Futures trading	393	Oats products	14
Brokers	385	Corn products	10
Terminal elevators	50	Railroads	10
Pit scalpers	48	Steamships	9
Packers	44	Salvage grain	8
Provisions	41	Line elevators	8
Feeds	35	Stockyards	1
Exporters	27	Vinegar	1
Flour mills	24	Inactive	70
Banks	16		
Maltsters	15	Total.....	1,617

⁷ BOYLE, JAMES E., "Speculation and the Chicago Board of Trade," p. 16.

Other references on organized speculation are: Federal Trade Commission, Report on the Grain Trade; BRACE, H. H., "Organized Speculation"; DONDLINGER, P. T., "Book of Wheat"; HOFFMAN, G. W., "Hedging by Dealing in Grain Futures"; HUEBNER, S. S., "The Functions of Produce Exchanges," *Annals of the American Academy of Social and Political Science*, September, 1911.

Both cash grain and futures were sold on the same floor at the Chicago Board of Trade, and many members of the Board customarily made deals on both cash and futures markets. As can be seen from the classification of members, about one-fourth primarily were engaged in receiving and selling consigned grain or in shipping cash grain. Samples of cash grain were distributed on the tables early in the morning. Trading began at 9:30, but buyers and sellers usually spent the first hour largely in "feeling out" the market. The buyers comprised representatives of terminal elevators, shippers to eastern mills, flour millers, manufacturers of cereal products, feed manufacturers, and exporters. The chief sellers were the commission merchants who handled consigned grain. Since the rules of the Board of Trade forbade the commission merchant to act as both principal and agent in the same transaction, grain consigned to them had to be sold in the open market. In addition to selling consignments of grain, the commission merchants financed country shippers extensively by making advances against bills of lading, called for reinspection in cases where they thought the grades could be raised, and as agents for the country shippers filed and pushed claims for shortage and damage of grain in transit. The rules of the Chicago Board of Trade prohibited a commission merchant from rebating any part of his commission to the shipper.

Approximately another fourth of the members were engaged principally in trading in grain futures; these were the professional speculators. They operated on the "long" or "short" side of the market as their judgment dictated, and a majority of them did not engage ordinarily in the handling of actual grain. Brokers, who acted as agents for others both in cash grain and futures, principally in the latter, made up roughly another fourth of the membership. The rate of commission on the cash grain business was substantially the same on all markets, namely 1% of the value of the grain. Normally the volume of futures trading in any one day on the Chicago Board of Trade was from 10 to 20 times as great as the volume of cash or to-arrive grain sold. Commissions on futures trades, fixed by the rules, in 1922 were $\frac{1}{4}$ cent a bushel for what was known as the "round turn"—that is, both buying and selling. No commission was charged on futures trading done by members for themselves; on futures trading by members for other members, the commission was $\frac{1}{8}$

cent a bushel for the round turn. A large part of the trading in futures was carried on by members for themselves.

The Chicago Board of Trade in 1922 was the predominating market in the United States for organized futures trading in grain; the volume of futures trading at Chicago was much greater than at any other grain exchange in the United States. The futures contract was made upon the basis of a specified grade of grain, known as "contract grade." The contract provided for delivery either on the buyer's demand or at the seller's pleasure at any time within a specified month at the price fixed in the contract. Provision was made in the rules of the Board of Trade whereby other grades might be delivered on the basis contract with stipulated adjustments in price. For instance, on contracts for future delivery a tender of No. 3 Dark Hard Winter Wheat, No. 3 Hard Winter Wheat, No. 3 Yellow Hard Winter Wheat, No. 3 Red Winter Wheat, No. 1 Hard White Winter Wheat, and No. 2 Hard Winter Wheat was deemed valid, subject to the regular provisions of the rules, at a discount of 5 cents per bushel. Similar regulations prevailed in regard to corn, oats, rye, and barley.

The delivery of grain on the exchange was effected by the transfer of warehouse receipts issued by regular elevators. In order to issue warehouse receipts a warehouse had to conform to regulations prescribed by the rules of the Chicago Board of Trade. The receipts themselves had to conform to stipulated regulations and had to be registered by an officer duly appointed for that purpose.

In an emergency the board of directors of the Chicago Board of Trade had power to declare warehouses, vessels, or other places suitable for the storage of grain, within the Chicago Switching District, subject to stated provisions, to be regular places for the storage of grain deliverable under the rules of the Board of Trade. It was provided further in the rules that, when conforming to stated requirements, grain in cars in the Chicago Switching District that had been inspected and graded should be deemed valid tender on contracts during the last business days of each month, or on any business day of any month when in the judgment of the directors an emergency existed.

Most futures contracts made on the Chicago Board of Trade and other speculative markets were settled by the payment of

differences. Although a futures contract was valid in the eyes of the law, and actual delivery of the commodity legally could be insisted upon, it was stated that normally not more than 1% of the futures contracts entered into on the Chicago Board of Trade were consummated by actual delivery of the grain. At the time of settlement, if the spot price was higher than the price named in the contract, the difference was paid by the seller; if the spot price was lower than the price named in the contract, the buyer paid the difference. To facilitate the settlement of differences a clearing house was organized on the Chicago Board of Trade, and at the close of each business day each member reported amounts due him from all other members and due from him to all other members. The operation of this clearing house was essentially similar to that of a bank clearing house.

Futures trading on the Chicago Board of Trade ordinarily was done on margin. A person buying 5,000 bushels of wheat at \$1 a bushel for future delivery, for example, usually was required to put up a margin of \$500, and the same amount was required from a person selling 5,000 bushels short at \$1. In the event of a substantial price change before the maturity or liquidation of a futures contract, a readjustment in the margin was called for.

Although trading in cash grain and transactions in contracts for future delivery were carried on simultaneously on the same floor, the two kinds of business were sharply differentiated in purpose. In a large proportion of futures transactions there was no intention on the part of either party that the contract should be fulfilled by actual delivery of the commodity named, though legally either party could insist on such delivery.

Questions

1. What purpose does a commodity exchange, such as the Chicago Board of Trade, serve?
2. What are characteristics of grain which adapt it to being traded in on an organized exchange?
3. May the Chicago Board of Trade be said to have a legitimate economic function?

CHAPTER XX

PRICING POLICIES¹

64. BENTON CAB COMPANY

Price Policy

A group of men decided to enter the taxicab business in a large city which, they were convinced, offered a fertile field for development by a company which could provide good service. A corporation known as the Benton Cab Company was formed. The capital was subscribed by the incorporators. The company desired to secure public interest and support from the outset, and the officers had to develop a policy to attain that end. Arrangements were concluded with a cab manufacturer to supply 75 cars of the model and design used by many companies in other cities.

The determination of the schedule of fares was the first problem. From an investigation which previously had been made in the city, the executives of the new company concluded that the companies then in operation were in a virtual combination to maintain rates at a high level; that their cars were for the most part nondescript; that many of their drivers were rough and discourteous; and that the service rendered was often undependable. Profits, moreover, did not appear to be commensurate with the high rates. These shortcomings and the success in other cities of companies which operated cabs of uniform model economically and profitably on a low schedule of rates, pointed the way to the new company.

The management was confident that the setting of rates at a level materially below those of other companies in the city would serve a double purpose. It would enable the company to secure

¹ COPELAND, pp. 328-362; MARSHALL, 340-352; MAYNARD, WEIDLER, and BECKMAN, 538-581.

a large share of the existing taxicab patronage and, in addition, to build up an extensive new patronage through the appeal of low rates to classes of people who previously had not used taxicabs because of the high fares. The company believed that the demand for taxicab service was elastic and, therefore, could be stimulated through a reduction in rates.

Such a reduction, however, could not wisely be made below the point which assured a reasonable margin of profit. It was necessary, therefore, to estimate accurately the probable costs of operation. For this purpose the cost figures furnished by the cab manufacturers were used as a basis. Those costs were incurred for cabs of the same type as those which the Benton Cab Company was to operate.

The prevailing rates of the old companies were 60 cents for the first mile, 40 cents for each additional mile for one person, and 20 cents for each extra passenger, with an added charge of 30% for return mileage.

The Benton Cab Company planned to secure drivers distinctly above the average of their group. Each applicant was required to fill out an information blank which gave complete details as to his education, habits, and previous employment. Before the manager engaged an applicant, he satisfied himself fully of the man's character and ability through personal interview and through a careful investigation of the references. The new employee was on probation for two weeks, during which his personal conduct and his capacity as a driver were watched closely. This was expected to be a cumulative advantage, since patrons were likely to use the taxicabs of this company exclusively if they were operated by careful, courteous, and honest drivers.

The company decided that its rates should be: 50 cents for the first mile, 30 cents for each additional mile for one person, and 10 cents for each additional person, with no charge for the return mileage of the vacant cab.

The company sought to attract the public through this price inducement and through the fact that its cars were new, clean, and in good running order, and that prompt and efficient service was guaranteed. All these appeals were stressed in the preliminary newspaper advertising. In order to establish the name of the company firmly in the minds of the public, a distinctive

design in contrasting colors was painted on the sides of each cab and prominently connected with the name. In this way each cab was made a moving advertisement of the company, and the attractiveness of the design and the well-kept appearance of the cars were effective in drawing favorable attention.

The success of these appeals was attested by the record of the company during the first year and a half of operation. It gained good will and patronage rapidly. Other companies, in an attempt to meet the competition, placed better cars in service, adopted distinctive color combinations, and reduced rates. That the Benton Cab Company, however, retained its initial advantage, was shown by its growing popularity. So great was the growth of demand for taxicab service that in the winter of the following year the company was able to give service to only one out of ten calls received. This condition led to a policy of expansion. On the basis of funds received from the sale of new common stock, 175 new cabs were ordered, to be delivered in small lots at frequent intervals. It appeared certain that all the new cabs could be kept in operation to their full capacity.

Questions

1. Would you agree that the demand for the company's service was elastic?
2. Would your answer to question 1 be different, if the company had merely adopted the lower fares without improving its service?
3. Should a company consider other factors than price in deciding how to attract patronage?
4. When the company was getting more business than it could take care of, should not the company have raised its rates?

65. SHELDON CHAIN STORE COMPANY

Price Policy—Elasticity of Demand

The Sheldon Chain Store Company operated a chain of 800 grocery stores in and near a large city. It purchased the bread sold in its stores from three independent bakeries. The company was unable to secure quantity discounts from the bakeries and was forced to pay the same price as unit grocery stores. In the company's stores, bread was sold mainly as a convenience to

customers, and no sales efforts were expended to increase its sale. In 1923, in order to secure a greater profit from the sale of bread, the Sheldon Chain Store Company established a bakery with a capacity sufficient to supply all its stores. After a study of probable costs, a suggestion was made that the loaf which was sold in chain and unit groceries at 11 cents, should be priced at 9 cents, and the 8-cent size at 6 cents.

It was possible to sell at the reduced price because the company's cost of production was estimated to be lower than that of independent bakeries. Modern equipment, which produced at minimum cost, had been installed. The bakery was operated as a department of the company's main office and warehouse, with consequent economies in fixed charges, such as those for administration and accounting. The cost of raw materials was low, because purchases were made on a larger scale than those of most other bakeries in the vicinity, and cash discounts always were taken.

The tentative costs on which the suggested prices were based were accepted as accurate. The Sheldon Chain Store Company owned a portion of the stock of a similar bakery operated in another city. The costs in the latter were used in the compilation of estimates for the new bakery.

The chief advantage to be derived from selling at a reduction of 2 cents per loaf below prevailing prices was the increase in quantity of bread sales to be secured. As a staple commodity with a definitely established price level, bread offered at a decreased price was likely to attract additional purchasers. The chief executive of the Sheldon Chain Store Company estimated the probable increase in bread sales to be one-third of the quantity formerly sold. The company was willing to sell at one-half the percentage of profit on each loaf realized by independent bakeries, because of the increase in sales.

Introduction of a new brand of bread, furthermore, would be facilitated by a reduced price. The bread purchased from bakeries by the Sheldon Chain Store Company had been sold under trade-marks developed by the bakeries and well known to the public. Purchasers were not likely to demand a new brand unless interested by a special price inducement. At a low price, bread might be used as a leader to attract new customers to the stores.

In opposition to the proposal, it was pointed out that if the price were fixed at the prevailing level, an increased percentage of profit was to be realized. The company was confident that its bread would equal in quality any other brand on the market, because it would be made according to the formula used successfully in the bakery upon which costs were based. Full value could be given the public if the prices were fixed at 11 cents and 8 cents. Although the introduction of a new brand at the established price would be difficult, aggressive sales efforts, such as attempted substitution for brands demanded by customers, special displays in stores, and advertising campaigns, could be used to develop demand for the bread on a quality basis. This type of appeal might be more permanent than one based on price.

A possible result of a low price was that competitors might reduce their prices to the same level. In that event, the company might be forced to adopt aggressive sales methods in order to sell the new brand. It was urged that active sales efforts be instituted at the start, without a reduction in price, so that active competition on a lower price level would not be invited.

The officers were of the opinion, however, that none of the competitors could sell bread so profitably at the low prices contemplated as could the Sheldon Chain Store Company.

Questions

1. Should the Sheldon Chain Store Company sell at the 9- and 6-cent prices?
2. If such a step were taken, what would be the effect upon competing bakeries and retail stores?

66. CASCADE DEPARTMENT STORE

Style Risk

Well in advance of the spring season, the buyer for women's suits in the Cascade Department Store, an eastern metropolitan retail establishment selling high-grade merchandise, placed orders for 146 tweed suits. It was his judgment that tweed suits would be popular that spring, both because of the general style movement toward sport clothing and also because tweeds, being of loose-weave construction, could be manufactured to retail at lower prices than many fancy woolen and worsted fabrics.

Nevertheless he did not wish to order tweed suits heavily before he had tested their popularity with the store's clientele, since the style trend had been away from suits during the previous two seasons.

The expense, direct and prorated, in the women's suit department in the Cascade Department Store was normally 26% of net sales, and the net profit normally was 4% of net sales. Eighty-one tweed suits, purchased at \$25 each, were marked to retail at \$48.50, and the other 65 suits in the first order, which were of somewhat less expensive material and cost \$20 each, were marked to retail at \$35.80. As soon as these suits were placed on sale, it was apparent that tweeds were to be popular. The buyer, therefore, placed orders for 372 suits. By this time other garment manufacturers had copied the designs of the pioneers in the tweed-suit field, and competition had brought the price to department stores down to \$17.50 for suits that previously had cost \$20. The shopping bureau of the Cascade Department Store reported that competing department stores were selling at \$30 tweed suits which were equal in value to those sold by the Cascade Department Store at \$35.80. Therefore, as soon as the order was placed for 372 suits at \$17.50 each, the retail prices on all tweed suits in the department were reduced to \$25.

As the season progressed, sales of tweed suits continued to be large, and more and more manufacturers engaged in the production of this popular line. Replacement value fell to \$15.50, at which figure the suit buyer of the Cascade Department Store, after consulting the merchandise manager, ordered 156 suits. At that time it was becoming difficult to secure deliveries on the dates promised, and several other department stores, which had not bought tweeds early in the season, were reported to be ordering heavily. By the time these suits were received, competitors were selling similar merchandise at from \$21 to \$23; consequently, the Cascade Department Store reduced the price to \$19.75. Toward the end of the season it was evident that the popularity of tweeds was to be short-lived. In the Cascade Department Store 76 suits had been sold at \$48.50, 64 at \$35.80, 295 at \$25, and 138 at \$19.75. There were left in stock 101 suits. Retail prices on these were reduced to \$15 for a widely advertised clearance sale, and at this price 33 suits were sold. Three days later the price was reduced to \$10, at which figure 28 suits were

sold. There were still 40 suits left in stock which apparently would not move at a retail price of \$10 each; consequently, rather than to carry any tweed suits over to the next season, the store reduced the price to \$5, and at this figure all the remaining suits were sold.

During the closing-out sale of tweed suits at \$5 each, a regular customer of the Cascade Department Store, who had purchased a tweed suit early in the season at \$48.50, visited the suit department and protested in strong terms to the assistant buyer that, if the store could afford to sell tweed suits at \$5 each, she had been greatly overcharged when she paid \$48.50. The assistant buyer pointed out that nearly all the suits being sold for \$5 were of poorer quality than the one that she had bought early in the season, and that the price for this final sale had been specifically advertised as "less than one-third original cost." The customer then raised the objection that it was unfair for the store to lower prices on these suits to a point where so many people of the lower social classes were wearing them that she no longer liked to wear hers. Eventually she went away dissatisfied.

Questions

1. Was the Cascade Department Store justified in pricing the original lots of tweed suits at \$48.50 and \$35.80?

2. In the light of the experience of the store in merchandising tweed suits up to that time, should the merchandise manager have approved the plan of the buyer in the suit department when the latter submitted his proposal for the purchase of the last lot of 156 tweed suits?

3. Should the store have granted a rebate to the dissatisfied customer who complained that she had been overcharged?

67. WILDA BISCUIT COMPANY

Price Policy—Trading Down

The Wilda Biscuit Company manufactured high-quality package biscuits and crackers in 140 varieties, which it sold exclusively to retail grocers. It advertised extensively in the six-state area in which it operated; the company was well established and had gained a favorable reputation for the quality of its

products. The biscuits were shipped to retailers immediately after manufacture; none were held in storage awaiting orders. The company employed 150 salesmen on a commission basis, who called on retail grocers in the districts which it served. Selling terms were either cash on delivery or open account,² according to the rating of each customer.

The operations of the company had been successful, but salesmen were requesting to an increasing extent that a line of lower-grade biscuits be added to the high-quality products being manufactured by the company. The salesmen stated that an increase in the volume of sales could be secured, despite the competition of other producers, by obtaining distribution in retail stores which previously had been unable to sell the company's biscuits because of their high price.

Discussion of the request for a lower-quality line brought out the fact that such a product might injure the prestige of the Wilda brand, which the company had spent years in developing. Addition of a less expensive line of biscuits, in other words, might have the effect of trading down, through offering to customers products of two grades at one time. Customers probably would tend to buy the lower-price grade, believing it to possess almost all or all of the qualities of the higher-grade products. Perhaps it would be difficult, therefore, for the company's salesmen to use consistent selling arguments when offering both a high- and a low-grade line of biscuits. It seemed probable, furthermore, that the credit ratings of the new customers would be less satisfactory than those of customers already served by the company.

In the opinion of the sales department, however, these difficulties could be overcome and the established brand protected if the new product were given a distinctive name which did not divulge the identity of the maker. The credit aspect offered no serious obstacle, because goods could be sold on cash-on-delivery terms.

An advantage of making the new line was that machinery could be utilized more completely. In the manufacture of biscuits, after the dough was mixed it was transferred to a machine

² An "open-account" sale was one in which the customer was allowed to receive the goods on credit, and pay for them later in accordance with agreed-upon arrangements.

performing three operations: panning, peeling, and cutting. At the end of the operations on this machine, the biscuits were ready for the oven. Each panning, peeling, and cutting machine was so placed that it supplied an oven. Frequently a series of machines was idle, and, because of their size, the idle-time charges on them were heavy. The manufacture of a cheaper line of biscuits seemed justifiable if the sales permitted the company to eliminate idle-machinery charges. No storing or purchasing difficulties were present; the labor force was adequate and competent to produce the additional line.

The company consequently decided to make, under a separate trade name, 18 new varieties of biscuits. These were not to be packaged, but shipped in cases. Because of this economy and the use of cheaper materials, the new brand could be sold at prices 20% lower than those of the Wilda variety. Salesmen were instructed not to solicit orders for the new biscuits from the established customers of the company but to use the new line to obtain orders from stores to which the company had formerly been unable to sell. The rate of salesmen's commission on the new line was slightly lower than that on the old line.

Questions

1. Discuss the advisability of adding the lower-grade line of biscuits to the high-grade Wilda products.

2. The Packard and Pierce-Arrow automobile companies had confined their operations to the manufacture of very high-grade automobiles. In order to expand their markets, however, each added a smaller, less expensive line of cars to its established line. The two classes of cars in each case were marketed through the same dealers under the same trade name.

Was this policy trading down? Compare this situation with the introduction of the lower grade of products by the Wilda Biscuit Company.

CHAPTER XXI

CHAIN-STORE DISTRIBUTION ¹

68. HAHN DEPARTMENT STORES, INC.

Establishment of Chain Department Stores

In retail business the year 1928 was characterized by widespread interest in department-store mergers. One of the most notable of these, the Hahn Department Stores, Inc., was announced on December 11, 1928. Twenty-seven stores operated by 22 firms and located in 25 different cities were included in this consolidation.

Total sales of these stores in 1927 amounted to \$108,000,000. Their annual net profits for the three-year period, 1925, 1926, 1927, averaged over \$6,000,000. At the time of the merger, combined total assets were \$51,924,000, with current assets of \$34,666,000, and current liabilities of \$8,222,000. Good will was valued at \$1. In the announcement of the merger it was stated that this group was the nucleus around which a larger organization, expected eventually to have sales of \$1,000,000,000, would be developed. Negotiations were said to be already under way for the acquisition of additional stores.

The authorized capital structure of the Hahn Department Stores, Inc., consisted of \$60,000,000 of preferred stock and 5,000,000 shares of no par value common stock. Twenty-three million dollars of 6 $\frac{1}{8}$ % cumulative convertible preferred stock and 1,284,000 shares of common stock were issued. The preferred stock was offered at 103 and accrued dividends, and the common at 38. Market quotations for these stocks on January 5, 1929, were 112 $\frac{3}{8}$ and 54 respectively.

The individual stores were to retain their identities and were to be operated by their former officers. General control of the

¹ DUTTON, pp. 446-448; MARSHALL, 296-298; MAYNARD, WEIDLER, and BECKMAN, 110-130.

corporation was in the hands of a board of directors composed of the presidents of the individual companies. George W. Mitton, president of the Jordan Marsh Company, of Boston, was chairman of the board, while Lew Hahn, formerly managing director of the National Retail Dry Goods Association, was president of the corporation.

A list of the firms included in the Hahn combination was as follows:

INITIAL GROUP OF FIRMS INCLUDED IN HAHN DEPARTMENT STORES, INC.

<i>Firm</i>	<i>Location</i>
Jordan Marsh Company	Boston, Mass.
C. F. Hovey Company	Boston, Mass. (owned by the Jordan Marsh Company)
L. S. Donaldson Company	Minneapolis, Minn.
The Bon Marché	Seattle, Wash.
The Golden Rule	Saint Paul, Minn.
The Rollman & Sons Company	Cincinnati, Ohio
Herpolsheimer Company	Grand Rapids, Mich.
Titche, Goettinger Company, Inc.	Dallas, Tex.
O'Neill & Company, Inc.	Baltimore, Md.
Quackenbush Company	Paterson, N. J.
The A. Polsky Company	Akron, Ohio
The Morehouse-Martens Company	Columbus, Ohio
The Welber Company	Columbus, Ohio
The James Black Dry Goods Company	Waterloo, Iowa
Rudge & Guenzel Company	Lincoln, Neb.
The Meyer's Company	Greensboro, N. C.
The L. H. Field Company	Jackson, Mich.
F. N. Joslin & Company	Malden, Mass.
The Muller Company, Ltd.	Lake Charles, La.
A. E. Troutman Company	Greensburg, Pa. (operating five additional stores)
Louis Samler, Inc.	Lebanon, Pa.
Wright-Metzler Company	Connellsville, Pa.

As soon as facilities could be arranged, the corporation expected to open a central office in New York City. In this office there were to be five functional directors, as follows: (1) Director of Merchandising Operation, who was to be familiar with modern principles of merchandising; (2) Director of Sales Promotion, who was to supervise the sales direction and advertising; (3) Director of Market Operation, who was to be familiar with

market resources here and abroad, and who was to understand the control of central buying; (4) Director of Fashion Bureau, who was to relate buying and selling to fashion tendencies; and (5) Director of Store Management, who was to bring engineering ability to the operation of the store buildings.

The stores varied in size from the Charles Muller Company, with sales of \$875,000, in a city of less than 25,000 population, to the Jordan Marsh Company, with sales reputed to be considerably over \$35,000,000, located in a shopping center serving more than 2,000,000 people. While there seemed to be considerable diversity in the grades of merchandise handled by some of these stores, most of them carried merchandise of medium and medium-high grade. The president stated that he believed the stores were no more diversified than were the departments of the average individual store.

Questions

1. Evidently there were reasons for believing that the profits of the consolidation would exceed the total of the earnings of the individual merged units, or the consolidation would not have been made. What were these reasons?

2. Do you think the consolidation holds much promise of success? Give your reasons.

69. BLUE BANNER CHAIN STORE COMPANY

Management of Chain Stores

The Blue Banner Chain Store Company controlled and operated about 300 retail stores in Pittsburgh and its suburbs. The stores sold a medium quality of fresh, package, and canned groceries and vegetables on a cash basis. The average inventory of each store was approximately \$2,100; sales for each store varied from \$500 to \$1,500 per week. Continual competition from unit stores and other chain-store organizations forced the Blue Banner Chain Store Company to a constant examination and an occasional adjustment of its methods of operation.

Both the cost and the retail selling price of merchandise delivered from the warehouse to the stores were entered daily on records maintained at the warehouse. Accompanying each order was a slip, on which was recorded at the warehouse the

date, the clerk who made delivery, the quantities of each type of goods delivered, the retail selling price, the total amount of the order at the retail selling price, and a column in which was to be entered at the central office the amount of mark-up or gross profit which would be secured on each order. When the goods were delivered to the manager of a store, he checked the lot, and if it agreed with the slip, he confirmed the delivery. The slip was returned from the store immediately and the mark-up was entered in the proper column by clerks at the head office. Daily sales were recorded at each store; at the end of each week a report of total weekly sales was sent to the main office. Under this system, the managers of the stores did not know the cost of the merchandise delivered to them, nor the proportion of company expenses and overhead properly chargeable to their stores. Consequently, they were unable to determine either the gross or the net profit resulting from their operations. It was suggested that it might be advisable to change this policy so that each store manager would know either the cost of merchandise charged against him, or the expenses attributable to his store, or both.

Each store was directed by a manager who did all the selling, except when the store was large enough to justify the employment of one or two assistants. Each manager received a guaranteed salary of \$30 per week and a commission of 2% on all sales which exceeded \$400 per week. The general manager stated that the average earnings of a store manager were about \$36 per week. No discounts on purchases were given employees.

About 20 stores, located in contiguous territories, were grouped to form a district supervised by a superintendent who was a former store manager. Five districts, on the average, were grouped to form a unit in charge of a supervisor who had had experience both as a store manager and as a superintendent, and who was responsible to the general manager. Each store was visited once a day by the district superintendent, and once every two weeks by the supervisor. The superintendents and the supervisors were able to judge by a visual survey whether or not a given store contained too much stock on its shelves. The general manager also visited each store, whenever possible.

All purchases of stock for the Blue Banner Chain Store Company were controlled at the central office by a purchasing

department, which consisted of a head purchasing agent and six or seven assistants. The head of the purchasing department kept a close watch upon all purchases and all inventories held in the warehouse. He made a monthly report to the president of the company, which showed the quantity in physical units and the value in dollars of all purchases made during the month and of warehouse inventories at the end of the month. If the president of the company was convinced that the warehouse inventory was too high or too low, steps were taken to remedy the situation. Every three months, a physical inventory of the warehouse stock was taken. The book inventory, which was recorded continuously, was adjusted according to the results of this inventory. Inventories of stores were taken at intervals of from two or three weeks to three or four months, depending upon the experience of the manager. A permanent squad of three men conducted these store inventories.

The general manager estimated that the average turnover, computed by including the inventories in the warehouse as well as in the stores, was approximately nine times per year. Any groceries which were selling slowly were marked down to a retail selling price which would move them, and no more purchases of such articles were made by the Blue Banner Chain Store Company. In order to attract buyers into the stores during each week, the company offered for sale some special article which was marked at a bargain price. Groceries, also, occasionally were marked up or down at the central office because of fluctuations in market values. Each time a change in price was to be effected, the general manager sent to each store, and to the superintendents and supervisors, announcements which gave the amount of mark-up or of mark-down, and the articles which were affected.

The general manager stated that there were no maximum nor minimum limits for inventories in the warehouse or in the stores, either on a dollar or on a quantitative basis; inventories were governed by the combined experience and judgment of the organization described above. Through this method of close observation of the operations and stock of each store, by men of experience, the general manager was convinced that satisfactory control of inventory was maintained.

Questions

1. Should the store managers know the cost of the merchandise charged to them or the expenses chargeable against their stores, or both?

2. What are the principal difficulties in the management of a large chain of retail grocery stores?

3. Do you think the training received by the manager of a unit in a chain-store organization is enough to enable him to establish an independent, individual store of his own which will compete advantageously with the chain stores in the district?

70. GREAVES COMPANY

Sale of Meats in Chain Grocery Stores

The Greaves Company was a grocery chain-store organization which operated about 1,500 units in the cities and towns of the Middle West. All of the stores were located within a radius of about 300 miles from the company's executive office and warehouse. The annual sales of the Greaves Company amounted to approximately \$45,000,000. The merchandise sold consisted of high-quality staple groceries, dairy products, citrus fruits, and dry vegetables. The executives of the company were contemplating, in the autumn of 1925, the addition of a full line of staple meats to the merchandise already being handled by the units of the Greaves chain.

Officials of the Greaves Company had been aware for some time that chain grocery-store organizations in other territories had been promoting the sale of meats in their stores, with apparent success. In the territory served by the Greaves Company, no chain grocery stores were offering meats. Locally, therefore, meat was sold to consumers by unit meat or grocery stores, or by chain meat markets. The executives of several somewhat distant, non-competing chain grocery-store companies had provided reliable information which showed that it was possible for such companies to sell meats at a profit. Information concerning the operating policies already in successful use also had been given to the Greaves Company.

It was not alone these favorable reports which led the officers

of the Greaves Company to take under advisement the question of selling meats. The officers were inclined to believe that the chain-store selling of groceries in the United States had reached a definite turning point so far as the buying habits of consumers were concerned. It was believed that there was a widespread desire on the part of customers to be able to purchase all food supplies at one store. In view of the successes already secured in other territories by chain stores offering meats, it was altogether likely that local chain-store competitors of the Greaves Company might expand into the meat business at any time. Even without regard to the probable actions of competitors, the officers of the Greaves Company believed that the sale of meats in conjunction with groceries would stimulate sales of the latter, with consequently increased effectiveness of store operation. Finally, the Greaves Company was in a favorable position to negotiate for the acquisition of a local well-established profitable chain of 20 meat markets already operating in the important centers served by the company. This chain was known to possess valuable good will among consumers; its markets carried high-grade meats at prices which were well below those of unit meat stores.

Acquisition of the chain of meat markets would permit the Greaves Company to begin selling meats without having to provide an entirely new personnel and equipment to care for sales of meats. The organization of the Greaves Company had been developed for the purpose of operating grocery stores, rather than stores combining both grocery and meat departments.

The purchasing function for all the stores was performed in the executive offices. Goods were charged to the stores from the warehouse at both cost and retail prices, although the invoice delivered to the store manager carried only retail prices. A few articles, such as milk, eggs, butter, and crackers, were delivered directly to the individual stores by the vendors, who made out invoices at prices prescribed by the Greaves Company in such a way that the store manager did not know the net cost of such merchandise. All purchase invoices, after being checked as to quantities delivered, were paid by the central office.

Financially, the company was well able, without seeking new capital, to carry through a merger with the chain meat-market company, and to provide for the necessary changes in store

location, buildings, and equipment. The plan under advisement was that the Greaves Company should take over the ownership of the 20 meat markets operated by the chain. In the case of each market, the company either would arrange to keep the established location, adding sufficient space to stock and sell the company's usual line of groceries, or it would relocate the market either in conjunction with an established store of the Greaves Company or in a new store to be secured for that purpose. It was estimated that such a combination store would require slightly more than twice the space needed for groceries alone.

The merger involved some losses in disposing of previously acquired leases and in adapting store buildings to the combination activities to be carried on. The losses thus incurred probably would be recovered within a few months, if the plan should be successful. These expenses were not confined alone to the 20 combination stores under immediate consideration, because if it commenced to sell meats, the Greaves Company expected to install meat sections in other of its stores as rapidly as was found to be feasible.

To make possible the establishment of a meat division, it was estimated that an individual store should be centrally located and should have attained a sales volume of at least \$1,000 weekly. More than 100 of the company's stores filled these requirements.

It was estimated that in stores selling both meats and groceries, total sales would be divided about equally between the two sections. A store of this type, to be successful, should have weekly sales of over \$2,000, of which at least \$1,000 would be in groceries.

To expand its meat business beyond the 20 original markets would compel the company to face a number of obstacles. The handling of meat in a retail store was quite different from the selling of groceries. In addition to physical requirements for refrigeration and for handling effective display, there were important considerations involving personnel. The supply of competent butchers who could act either as managers of meat sections or as meat cutters in these sections was scanty. Effective cutting and preparation of meat required skilled employees. The carcass of an animal such as a beef steer, for instance, contained many different cuts of meat, each cut bringing a different

retail price.² Use of unskilled or careless meat cutters might mean substantial waste and loss through neglect to distinguish properly between the more and the less valuable cuts. Thus, if through carelessness or lack of knowledge a butcher included a substantial portion of a 50-cent cut in making up a 30-cent cut of meat, loss was inevitable. Proper cutting in relation to bones and waste portions of the carcass was necessary to prevent discrimination between customers and losses to the company. Losses from careless or unskilled cutting might run as high as 5% of net meat sales.

In addition, meat was purchased, warehoused, and delivered to the retail markets in large pieces, sometimes including entire carcasses. It was impossible to foretell the number and poundage of the various cuts in a large piece of meat. Except for a few items such as packaged sausage, no sufficiently accurate standardization of meat shipments could be made to permit of applying retail prices to meats delivered to stores. Hence, the warehouse stock control plan as outlined above could not be applied to the handling of meats. Relatively, only a rudimentary type of unit stock control could be kept for meats. A high stock-turn in meats was essential to assure attractive, wholesome stocks.

Some meat could be purchased locally, but much of it would be ordered in car lots from the Chicago plants of large meat packers. Delivery in car lots could be made directly to the meat warehouse of the chain market.

Meat already was being purchased centrally by three buyers for the chain meat-market company. These buyers, as well as the warehouse which the meat chain was using, could be retained by the Greaves Company if the merger were undertaken. There was no immediate likelihood of economy in delivery expenses through the merger, because deliveries from the meat chain's warehouse could not be combined readily with deliveries from

² Market quotations on retail prices of beef on a typical day contained the following items:

"Steak: Sirloin, 70 cents a pound; tenderloin, 90; porterhouse, 75; top of the round, 60; bottom of the round, 40.

"Roasts: Sirloin, 60 cents a pound; sirloin roll, 60; first two ribs, 55; first three ribs, 45; fourth and fifth ribs, 35; fifth rib, 30; face of rump, 40; heel of rump, 35; back of rump, 35; chuck roast, 35; bottom of the round, 40; top roll, 30; pot roast, 30."

the Greaves Company's warehouse. The delivery of meats required trucks of a different type from those used for groceries, and it was expected that the fleet of trucks already in use for delivering meat would be retained independently of the Greaves Company's trucks. Meat deliveries to stores presumably would be made three times a week, while grocery deliveries usually were made weekly.

On the basis of the operations of the meat chain, the officials of the Greaves Company estimated that a gross margin of about 25% could be obtained on meats, provided the store personnel were fully effective. Store expenses, including prorations for central office items of all kinds, were estimated at 20% of sales for meats, where they were 18% for groceries. Store labor alone was figured at 10% of meat sales and at 8% of grocery sales. It was possible, however, that this 8% would be reduced somewhat in combination meat and grocery stores, if the sales of groceries were increased. Officials of the Greaves Company expected that in combination stores the sales of groceries might increase 10% because of the larger number of people attracted to the store. Such an increase could be handled without additional store employees.

While the expenses of independent unit meat markets were not known, it seemed probable that such stores required a gross margin of from 25 to 30% of sales.³ The Greaves Company, offering no credit or delivery facilities, probably could not compete effectively with unit markets if it sought an average gross margin of over 25% of net sales. The company's prices, furthermore, would have to be at least as low as those of any competing chain meat markets or of other chain grocery stores which might follow the company's lead in establishing meat sections. In general, meats did not lend themselves readily to branding, and customers could not distinguish clearly, by inspection, one quality of meat from another.

³ In 1924 it had been reported that "The most typical gross margins of retail meat dealers range from 23 to 27 per cent of sales. The margins of the middle 50 per cent . . . range from 19.50 to 28.50 per cent of sales."—Northwestern University Bureau of Business Research, "Expenses, Profits and Losses in Retail Meat Stores," 1924, p. 14. Cf. U. S. Department of Agriculture, *Bul.* 1317, "Retail Marketing of Meats," June, 1925; 1441, "Methods and Practices of Retailing Meat," November, 1926; 1442, "Margins, Expenses, and Profits in Retailing Meat," November, 1926.

Meat prices would be established centrally, as was done for groceries, and communicated by letter to the store managers. The responsibility for applying the prescribed prices to the proper cuts of meat necessarily would be left to the store meat managers. While much meat usually was cut before sale, and thus could be placed on display in the stores, a substantial proportion of meat orders had to be cut to meet the demands of customers. Prices per pound on the various kinds of meat were displayed conspicuously in the stores, but when customers demanded weights differing from those on display, the meat had to be cut and weighed before the prices of such orders could be determined. In order to keep track of the margin actually obtained on meats, it would be necessary in each combination store to have a separate cashier for the meat section.

If the merger were to be consummated, the typical organization in a combination store would be approximately as follows:

Groceries:

Store manager
2 assistants
1 boy

Meats:

Manager
Cutter
2 clerks (one to sell fresh fruits and vegetables)
Cashier

This type of organization was suggested on the assumption that the chain meat company's supervisory organization, which paralleled closely that of the Greaves Company in form, would be retained. Thus, each combination store would have two managers, one for groceries and one for meats. The manager of the meat section would be supervised by an organization separate from that supervising the grocery section, up to the chief executives of the merged company. No serious friction between the dual managers of a store was expected since both would receive substantially the same compensation and each would have a distinctive part of the store to control.

Questions

1. Should the Greaves Company have undertaken the sale of fresh, staple meats in its stores?
2. Assuming that such a step was advisable, what would be the advantages of purchasing the meat-market chain as a facilitating measure?

CHAPTER XXII

SALES MANAGEMENT AND ADVERTISING ¹

71. BATES COMPANY

Coordination of Sales and Production

The demand for some of the products of the Bates Company, an Ohio corporation manufacturing a variety of paper products, was highly seasonal. All the products were subject to cyclical variations in sales. The company was convinced that it should take steps to reduce irregularities in production, in order to protect the quality of its goods, to reduce labor turnover, and to keep manufacturing and selling expenses at a minimum.

The Bates Company originally had manufactured only pasteboard boxes, but had expanded gradually until in 1913 it produced approximately 6,000 articles. About 65% of production was on special orders and about 35% was for stock. The company classified its merchandise by lines which it called *A*, *B*, and *C*. The *A* line included jewelers' supplies, such as plain and fancy pasteboard boxes, flannel rolls, and marking tags. Most of the boxes were sold to jewelers to meet the holiday requirements. Sales in the *A* line in 1913 were approximately 19% of the company's total sales.

The *B* line included articles generally sold to wholesalers and retailers, such as stationers' supplies, crêpe paper, and holiday goods. Holiday goods comprised table and room decorations, napkins, and similar articles. Sales of holiday goods were largest near the end of the year, but a considerable demand existed at Halloween, the Fourth of July, and other holidays. Sales in the *B* line made up about 35% of the total.

¹ COPELAND, pp. 216-288; DUTTON, 451-475; JONES, 532-564; LINCOLN, 620-661; MARSHALL, 319-340, 352-365; MAYNARD, WEIDLER, and BECKMAN, 345-361.

The *C* line included articles sold direct to the users, such as plain and printed tags and labels, and baggage checks. Sales of this class made up about 46% of the total.

In the *A* line, approximately 50% of the production was for stock and about 50% for special orders. All the merchandise in the *B* line was produced for stock. In the *C* line, nearly all the production was on special orders. Relative sales in the three lines for the five years ending in 1912 were as listed in Exhibit 1. These figures illustrate the tendency of sales in all lines to reach peaks in the fall of the year.

Control of all activities of the company was vested in the directors, each of whom was an active executive, with an office at the main factory. The vice president of the company was chairman of a merchandising committee composed of a merchandise manager for each of the five² principal classes of merchandise manufactured, the factory manager, and the purchasing manager.

Each of the five merchandise managers was chairman of a committee composed of executives connected with the production and sale of his class of merchandise. It was the duty of this committee to supervise the routine factory operations for its particular class of goods, and to recommend to the merchandising committee the introduction into the class of new articles and the discontinuance of old articles. The merchandising committee accepted or rejected these recommendations at its discretion. This committee, since it was composed of the chief executives for both production and sales, was in a position to harmonize those activities and to obtain effective cooperation in carrying out any policy it decided upon.

The Bates Company obtained national distribution of its output by means of its own salesmen, and gradually was developing foreign sales by the same means. Salesmen sold directly to wholesalers, retailers, and consumers. Wholesalers formed a comparatively unimportant link in the sales organization because the company had found that they emphasized questions of price, whereas the company desired to sell its products on the basis of their quality. The company maintained four retail stores: one

² For convenience in factory control, the *B* line of merchandise was divided into three classes, namely, dealers' goods, crêpe goods, and holiday goods, each supervised by a merchandise manager.

EXHIBIT 1

RELATIVE MONTHLY SALES OF BATES COMPANY BY
MERCHANDISE LINES, 1908-1912

(Average monthly sales in each year = 100)

A Line—Merchandise such as pasteboard boxes, flannel rolls, and marking tags—largely sold to jewelers:

	1908	1909	1910	1911	1912
January.....	44	44	52	29	31
February.....	49	45	49	38	37
March.....	58	68	61	65	60
April.....	52	56	57	53	71
May.....	52	63	61	56	61
June.....	58	68	75	67	61
July.....	54	71	61	52	67
August.....	102	72	83	84	111
September.....	156	115	121	146	168
October.....	214	146	149	213	189
November.....	200	213	236	257	210
December.....	161	239	195	140	134

B Line—Merchandise such as stationers' supplies, crêpe paper, and holiday goods—sold to wholesalers and retailers:

January.....	85	86	66	96	99
February.....	85	79	95	101	103
March.....	89	100	100	118	107
April.....	79	81	98	85	87
May.....	74	78	98	91	92
June.....	73	74	91	90	82
July.....	63	64	90	78	75
August.....	76	75	86	90	120
September.....	104	93	106	138	161
October.....	141	167	130	109	97
November.....	187	167	145	132	108
December.....	144	136	95	72	69

C Line—Merchandise such as tags, labels, and baggage checks—sold direct to consumers:

January.....	97	94	89	91	86
February.....	81	82	80	88	90
March.....	97	101	79	112	92
April.....	94	93	98	94	95
May.....	89	93	100	99	96
June.....	90	89	101	100	97
July.....	96	87	93	84	91
August.....	95	98	102	99	104
September.....	100	98	103	99	102
October.....	117	119	110	109	111
November.....	107	113	118	106	109
December.....	137	133	127	119	127

each in Boston, New York, Cleveland, and Chicago. The company had established these stores primarily as sales agencies, but finding that as such they were not profitable, had turned them into demonstration centers where instruction was given to retailers and consumers in methods of using Bates products. The company's terms of sale were 25% off list for purchases of less than \$500, 30% off for purchases of more than \$500, 2% discount for cash payment, net for payment in 30 days.

Orders for stock were initiated by the stock department of the factory. This department was under the general control of the merchandising committee. Each of the recognized lines of stock goods was supervised by a clerk who was responsible for seeing that the maximum and minimum limits of inventory fixed by the merchandising committee were observed. Overstocking or understocking frequently occurred, however, because of fluctuating demands. Orders for special articles were scheduled to the manufacturing divisions as received.

The average time required to produce an order was approximately three weeks. Because the factory was largely dependent on special orders, the factory manager frequently found it necessary to operate machines overtime during the busy season, while the same machines were either idle or operating below capacity in dull periods. This condition was undesirable for many reasons.

The selling point which the company stressed particularly was quality. The company recognized that the production of merchandise of high quality necessitated the maintenance of a force of trained operatives. This was difficult when production was irregular. The company's rate of labor turnover averaged from 50 to 60% per year. When employees were laid off by the Bates Company in dull periods, they obtained work elsewhere and did not wish to return for temporary jobs in the busy season. The Bates Company normally employed approximately 1,500 operatives, of whom 60% were girls and women. The quality of the company's products demanded a higher type of worker than was employed in the average factory. The company had found that graduates of grammar schools and high schools were particularly desirable. Since this class of labor was obtained most easily in the summer months, the company desired to be in a position to recruit its force at that time.

Irregular operation of the factory was objectionable also because it was uneconomical. Overhead costs per unit of output increased during periods of curtailed production. The overtime work which was necessary in the busy season was unsatisfactory in respect of both the quantity and quality of the production. The company frequently refused orders in the busy season because the capacity of the plant was insufficient to fill them in the time desired, although they could have been filled easily in the dull season. Accepted orders occasionally were delayed beyond the promised delivery date because of unforeseen circumstances, such as breakage of machinery. The factory manager desired to maintain a reserve capacity at all times so that he could meet contingencies such as breakdowns, and could fill emergency special orders from old customers whose good will it was important to retain, or from new customers who demanded quick delivery. Because production was seasonal, the company had been unable to maintain a reserve capacity at all times.

The company was overstocked or understocked at times because sales failed to increase or decrease as expected. For example, sales of the *A* line usually almost ceased after the Christmas holidays. Occasionally, however, they extended well into the following month. It was difficult for the purchasing agent to make satisfactory schedules for purchases of raw materials to meet sales peaks which would occur months later. It was likewise difficult for the treasurer to arrange finances during the periods of peak production.

The directors of the company considered four methods of reducing the irregularities in production of both stock and special goods. One executive suggested that salesmen endeavor to persuade customers to place orders further ahead of delivery dates in order that the factory might schedule work to departments more uniformly. The objection to this proposal was that customers in general had difficulty in forecasting accurately their requirements for nine months or a year later. This was true particularly of customers for the *A* line of goods. It was possible, however, that special inducements in the way of price concessions might influence jewelers to cooperate in this plan.

Another executive suggested that stock orders be scheduled more carefully and that production on them take place in the dull seasons. The adoption of this proposal could have only a

limited effect, since stock orders and special orders were produced on different machines. It would be of assistance, however, in providing full-time employment to workmen, since on many classes of work operators could be transferred from one type of machine to another. It was pointed out that the plan necessitated production on forecasts of future demand for stock goods and, hence, involved risks of overstocking or understocking. This forecasting would require much of the time of the higher executives and would add to the work of the company's statistical organization. Extensive transfers of employees from one class of work to another would necessitate the use of some method of training workers for different jobs and of some method of assuring a uniform rate of wages to employees transferred from their regular work to work for which rates of pay were less. The factory manager of the company had learned that a policy of "hire and fire" was detrimental to the quality of the products.

A further suggestion was that the introduction of important novelty articles be held in abeyance until the dull seasons, at which times the company could concentrate on the production and sale of the new merchandise. The executive making this suggestion contended that the company should introduce new articles continually during periods of depression. He thought it might be advisable to use the company's retail stores as laboratories to test the salability of new products before they were adopted definitely. The policy of the company, heretofore, had been to introduce and sell products as they were designed.

Another executive maintained that the company could eliminate the irregularity in production of stock goods by laying down a definite factory schedule of manufacture each year and increasing sales effort to the degree necessary to dispose of the scheduled production. The executive believed this plan practicable inasmuch as the company was in a strong competitive position and the market for Bates products had not yet reached the saturation point. He believed that increased sales effort in periods of threatened business depression would reduce materially the falling off in production both of stock and special goods. He pointed out that the plan might be tried in connection with a few articles or a single line before the company became committed to it as a practice. An objection to his suggestion was that the company might find it difficult to forecast accu-

rately what the factory production should be, and consequently might overstock.

The Bates Company decided to utilize all the proposals. Salesmen were instructed to begin soliciting orders for a new season immediately after the close of the old season. Small price concessions were made occasionally to secure orders ahead of the usual time. No customers complained that they were overstocked as a result of advance purchases.

Forecasting of sales, both in stock and special orders, was done by the merchandise managers. A standard production schedule for the factory was set by the merchandising committee for each item manufactured. This schedule was set for a period of a year and allowed for a normal growth of 7% annually. Merchandise managers checked daily the quantity of work on hand for each type of equipment in their departments and, through the merchandising committee, called for increased sales effort when orders were needed to maintain the production schedule. Stocks on hand were checked every month by the merchandising committee. Occasionally, the planned production schedule was revised if materially out of agreement with actual sales.

A number of new articles were kept in reserve to be placed on the market in periods of depression. Sales effort was reduced in times of business activity, and salesmen were trained then to introduce the new articles. This policy of basing sales activity on the rate of orders proved satisfactory. Arrangements were made to train selected employees in different classes of work, and an unemployment fund was established from the company's surplus to be used in paying transferred employees the difference between their regular wages and the wages paid for the work to which they were transferred.

After 1914, the sales in the company's various lines usually were distributed throughout the year in such a way as to permit greater uniformity of production than had been possible previously. Figures showing relative monthly sales for the years 1913 to 1923 are given in Exhibit 2. During the business depression of 1920 and 1921, the company was able to maintain its factory force within 4% of normal. The labor turnover in 1923 was less than 25%, which was considered satisfactory by the executives of the company.

EXHIBIT 2

RELATIVE MONTHLY SALES OF BATES COMPANY BY
MERCHANDISE LINES, 1913-1923

(Average monthly sales in each year = 100)

A Line—Merchandise such as pasteboard boxes, flannel rolls, and marking tags—largely sold to jewelers:

	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
January.....	34	103	73	87	114	115	62	207	200	83	140
February.....	43	126	91	91	126	129	75	166	78	108	137
March.....	68	110	91	110	145	170	88	75	90	94	133
April.....	64	115	85	134	128	175	93	51	84	97	142
May.....	65	119	94	130	147	142	111	23	81	100	98
June.....	56	142	116	142	145	105	128	35	81	120	95
July.....	55	122	118	103	69	82	120	26	71	118	65
August.....	80	91	101	83	76	54	66	60	76	82	54
September.....	146	82	157	92	73	56	80	169	120	104	101
October.....	235	79	119	94	90	65	94	261	126	131	104
November.....	196	62	92	79	54	67	135	104	121	89	82
December.....	158	49	63	55	33	40	148	23	72	74	49

B Line—Merchandise such as stationers' supplies, crêpe paper, and holiday goods—sold to wholesalers and retailers:

January.....	104	122	82	93	101	75	62	152	137	113	137
February.....	105	101	79	95	80	90	66	175	79	123	124
March.....	99	161	101	136	126	111	98	115	126	116	134
April.....	89	150	122	131	143	115	102	116	126	108	128
May.....	96	127	99	104	116	117	102	78	112	115	111
June.....	80	122	108	99	111	122	113	78	95	89	84
July.....	67	103	81	83	84	104	101	99	77	76	74
August.....	92	100	81	80	83	92	91	94	83	85	71
September.....	145	117	102	88	81	87	118	88	87	89	83
October.....	129	40	114	103	114	110	125	94	108	101	96
November.....	107	32	125	108	96	67	130	68	97	103	90
December.....	87	25	106	80	65	110	92	43	73	82	68

C Line—Merchandise such as tags, labels, and baggage checks—sold direct to consumers:

January.....	101	105	85	93	120	79	82	117	98	91	113
February.....	88	101	89	90	104	85	66	118	91	98	105
March.....	101	112	102	112	108	92	80	123	105	103	119
April.....	96	105	96	100	105	105	90	134	100	82	101
May.....	100	104	106	100	98	143	87	83	102	107	116
June.....	95	108	99	90	86	132	97	107	99	97	92
July.....	95	89	90	77	94	162	107	96	95	91	82
August.....	93	94	92	88	86	80	116	112	99	94	86
September.....	96	97	105	100	95	81	127	84	100	103	91
October.....	115	104	113	118	113	99	130	103	112	120	114
November.....	100	93	109	121	102	113	103	72	108	116	101
December.....	120	88	114	111	89	29	115	51	91	98	80

Questions

1. What means did the company adopt in order to secure more regular production?
2. Was the company, in considering additional products, especially observant of what it could produce, or of what it thought it could sell?

See May 10 72. TINKHAM, LITTELL, INC.

Sales Organization

Tinkham, Littell, Inc., decided in 1918 to consolidate the sales forces and sales branches for its seven lines in order to eliminate duplication of sales effort. The firm originally manufactured one line and later purchased plants making six other, unrelated lines of products. The following table indicates the classes of customers and the number of sales branches maintained for each product prior to 1916:

Products	Customers	Number of sales branches
<i>A</i>	Coal, iron and copper mines, stone quarries, public utilities, railroads, etc.....	12
<i>B</i>	60% automobile manufacturers, 40% toilet goods and specialty manufacturers.....	5
<i>C</i>	Automobile and furniture manufacturers.....	3
<i>D</i>	Wholesalers.....	4
<i>E</i>	Large manufacturers.....	2
<i>F</i>	Cotton mills and other textile plants.....	2
<i>G</i>	Paint manufacturers.....	4
	Total number of branches.....	32

For several years the company had been dissatisfied with what appeared to be costly duplication of sales effort; separate sales branches were operated for marketing each of the seven groups of products. In Chicago, for example, there were five separate offices, each with a sales force for a single line of prod-

ucts of Tinkham, Littell, Inc. The organization prior to 1918 is indicated in Exhibit 1.

Each of the seven lines of products was sold by a separate sales organization, with a vice president in charge. Control of production was separated from control of sales for each line of products. A director of sales at the home office controlled the branches. Each branch manager was an expert in the product sold by his branch, and salesmen were specialists in one line. A customer who purchased more than one line of products from the

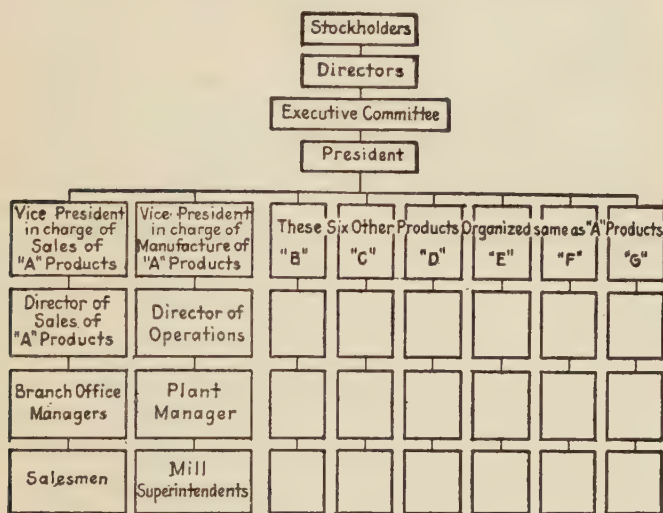


EXHIBIT 1.—Organization prior to 1918.

company gave his orders for one product to a salesman from one branch and his orders for other products to salesmen from other branches. When the company wished to compete for business in a small industrial center where there was only one user of a line of products, it sent a special salesman to the prospective customer, and this salesman did not deal with buyers of other lines of products; other representatives of the company were sent to the same community to sell other lines of products.

Executives of the company desired to save expense by eliminating visits by separate salesmen to individual buyers who purchased more than one line and by consolidating under one

salesman the work of selling the various products in a small town.

It was decided to experiment in the Jamestown district. Jamestown was chosen because it was a district with an average volume of sales and a good diversification of industries. The branches for the several products in that district consequently were consolidated into one branch office under one general sales manager, and the task of selling the various products among average- and small-sized customers was given to salesmen of whom each then sold all seven lines of products. Specialists still were retained to solicit orders from the large users of each line of products.

The experiment apparently was a success. It resulted in an increase in the total volume of sales and in the development of new accounts. Several industrial firms which before the experiment had bought only one product from the company became purchasers of more than one line. The reason for this usually was that the volume of purchases in the extra lines was so small that under the original organization it had not been advisable for salesmen in those lines to solicit such business. Salesmen were enabled to call upon customers whose annual purchases in a single line were not large enough to warrant a call under the original plan, but whose combined purchases were sufficient to justify a salesman's attention under the new plan.

Because of its success in the Jamestown district, the principle of the plan was adopted as a national policy in 1918. The branch-office organization and the field plans of each district had to be adapted to territorial conditions, but in general the new plan was as indicated in Exhibit 2.

Under the Jamestown plan, the marketing of all the seven lines of products was centralized in the general director of sales. Under the original organization, the seven directors of sales—one for each line of products—each had reported to a different vice president, in charge of one line of products. Under the Jamestown plan, the number of directors of sales at the central office was not changed, but all seven directors of sales were made responsible to the general director of sales instead of each director of sales being responsible to a vice-president in charge of sales of the particular line.

The plan provided for the centralization in each district of

all sales supervision and control for all seven lines of products in one branch office. The immediate result was the reduction in the number of branch offices from 32 to 13.

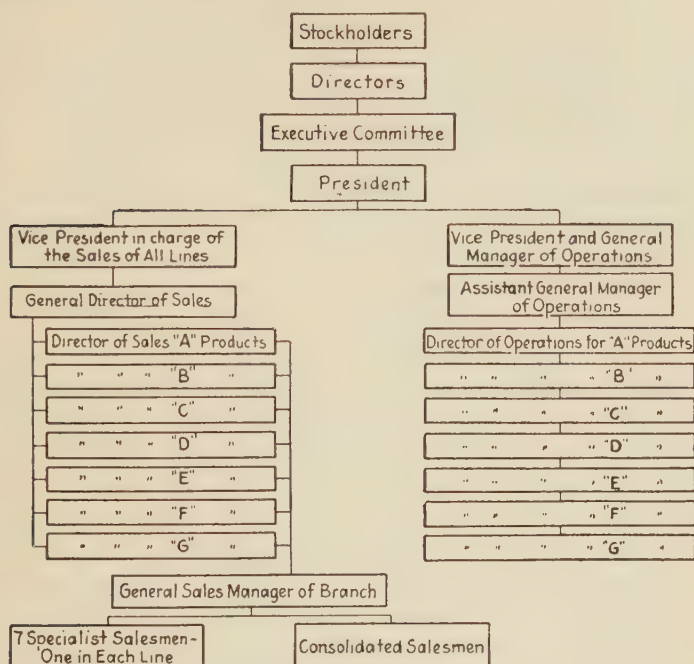


EXHIBIT 2.—Organization of field districts adopted in 1918.

Under the Jamestown plan, the consolidated salesmen, who sold all seven lines of products, were expected to eliminate duplication of sales effort. These salesmen called on customers whose total purchases in any line, including purchases from competitors of Tinkham, Littell, Inc., were large enough to justify either one or two calls a year. Special salesmen were retained at the branches to sell single lines to customers whose total volume of purchases in a line from all sources was large enough to justify from four to six calls a year.

Although the experiment in the single district indicated that the plan had advantages, it did not succeed as a national sales policy. Soon after the adoption of the Jamestown plan, reports came from three of the large branches that because of unfamiliarity with the technical qualities and uses of such varied

products, one salesman could not successfully sell the seven specialized lines of products. Unless the purchases of a customer were large enough to place him under a special salesman, he did not receive highly skilled technical advice until the consolidated salesman got into difficulty and sent for a special salesman. It appeared, furthermore, that different types of salesmen were needed to sell to different types of buyers. The best man to sell to buyers of *A* products was not always the best man to sell to buyers of other lines. It was discovered also that consolidated salesmen frequently had favorite lines of products which they pushed to the neglect of other lines. This tended to show, incidentally, the line of products for which each salesman was best adapted and indicated that several salesmen had been in wrong lines under the original plan.

Another weakness of the Jamestown plan, it was concluded, was the centralization of sales authority in a general director of sales, with a subdivision of this authority among seven subordinate executives called directors of sales, together with the further delegation of authority from all seven of these men to the centralized management of each branch. The manager of a branch was responsible for the sales of the specialists who sold only their respective lines and also for the sales of the consolidated salesmen who sold all seven lines of products. The problems of supervision of the consolidated salesmen by the branch manager and their difficulties in selling were increased by the fact that, in general, each line of products was used in a separate industry. The attempt to control the sale of seven unrelated products through one branch manager, who received his authority from seven directors of sales, had resulted in confusion in several branches. Under this plan, the company was unable to attach responsibility to the individual salesmen for changes in the volume of sales.

In order to carry out the Jamestown program of intensive efforts to secure small orders, it was necessary to increase the sales force rather than to reduce it as had been anticipated. It was found that there was no economy even in floor space used for branch offices. In the three largest branches new officials had to be appointed for administrative purposes, and the duplication of sales supervision increased selling costs. Despite the elimination of 19 branches, the percentage of selling costs to net

sales rose, and the percentage of net profit decreased, but the amount of total profit in dollars and cents increased during the operation of the Jamestown plan because of an increase in the aggregate volume of business.

Another objection to the Jamestown plan was double solicitation of customers on the part of the consolidated salesmen and the specialists. A consolidated salesman, for example, calling upon a prospect whose requirements in a particular line previously had not been developed, might secure an order large enough to place him in the class of customers reserved for the special salesmen. It also developed that a firm in some instances was a buyer of more than one line of the company's products and was in different classes for the different lines.

These difficulties with the administration of the Jamestown plan of organization led several executives of Tinkham, Littell, Inc., to conclude that it should be discarded and the original sales organization restored. Company opinion was divided. The old organization had been unsatisfactory because of the costly duplication of sales effort. Yet responsibility could be placed definitely under a system organized according to products; each salesman was responsible for the sale of his line in his territory; straight lines of authority ran directly from the president to the salesmen. It was anticipated, however, that an abandonment of the Jamestown plan might have a bad effect upon the morale of the sales organization. If the company went back to the old plan, it would be necessary in the three largest branches to demote officials who had been appointed for administrative work, unless they could be made branch managers for individual lines of products. Further objection to its discontinuance came from those districts in which a large volume of small orders had been developed. In those fields the company had not been able to develop small-order business under the old plan, but the Jamestown plan had been successful in reaching small buyers. It had enabled the company to serve small customers whose annual purchases of one line were not large enough to warrant a salesman's visit under the original plan, and to develop new accounts with customers whose purchases in some lines were too small to warrant calls by salesmen of those lines. Although the ratio of selling costs to sales had risen, it was pointed out by the proponents of the Jamestown plan that it had been used during

a period of extraordinary fluctuations in business conditions and that as business showed further improvement, the percentage of selling costs might be expected to decline, because the organization would not have to be expanded proportionately to handle the increase in volume of sales. As they stated, the Jamestown plan was instituted at a time when all costs had risen to abnormal heights and were still rising. In 1921, when its discontinuance was suggested, the volume of sales was low, and the costs of labor and supervision were relatively high. In addition, the system had been costly to install; buyers had become familiar with it; and it was feared that another change would suggest to the trade that the company's organization had become unwieldy.

In October, 1921, however, the company decided to go back to a modification of the original organization, as shown by Exhibit 3.

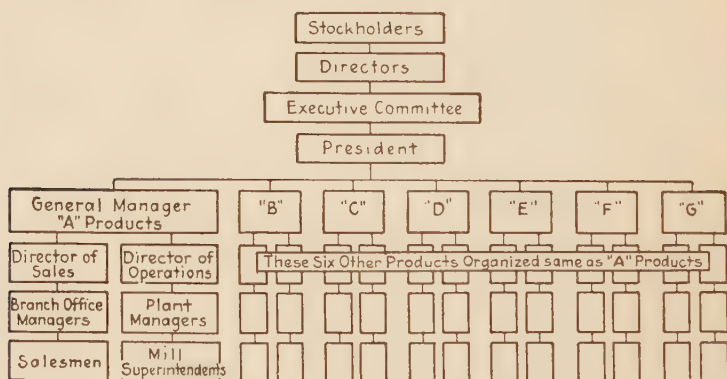


EXHIBIT 3.—Modification of original organization adopted in October, 1921.

The third plan concentrated control of manufacture and sale of each line in one individual. It coincided with the original plan in that it decentralized the sales control of all lines, and operated the branches and field forces for each line separately, thus doing away with the consolidated offices and consolidated salesmen. It made necessary the reopening of several branches which had been closed after the introduction of the Jamestown plan. Under the third plan, each salesman sold only one product in a specified territory for which he was responsible.

Questions

1. What type or types of business organization are shown in Exhibits 1, 2, and 3?
2. What were the difficulties with the original sales organization?
3. What were the strong points and the weaknesses of the Jamestown plan?
4. In what ways did the modified plan, adopted in 1921, improve upon the previous organizations of sales activities?

73. EXCELSIOR PAPER COMPANY

Functional and Divisional Sales Organizations

Because its small customers apparently were not receiving adequate personal attention, the Excelsior Paper Company, which manufactured writing papers, proposed to change the administrative organization as a means of improving the situation.

In 1919 the Excelsior Paper Company was marketing its products in practically all parts of the United States. It sold directly to retailers and also to wholesalers; the sales to wholesalers were incidental, for the company intended to develop its market primarily among retailers. About 40% of the sales were made to customers who bought in large quantities. Most of the customers were regular patrons of the company, but among the large number of firms which bought in small quantities there was frequent change. Many small firms which previously had been customers no longer were purchasing from the company.

The company had sought to emphasize a policy of fair treatment to all its customers. Nevertheless, in the sales department and also in the credit and shipping departments more personal attention had been given to large customers than to small customers.

When the rapid turnover among customers buying in small quantities came to the attention of the executives, the sales, credit, claims and grievances, and shipping departments all were organized functionally. The claims and grievances for all customers, for example, were handled directly and exclusively by a single department, and all collections were made directly by the

credit department. The company had planned to carry this specialization of functions further as the organization expanded.

In order to improve the service given small customers, however, the company decided that the sales office should be reorganized with territorial rather than functional specialization. According to this plan, the hiring and control of all salesmen for all territories was to be centralized under one head. Advertising also was to be centralized, and there was to be a single credit department. The country was to be divided into territories, and each territory was to be assigned to one man in the sales department. For his territory he was to have charge of the routine supervision of salesmen, of claims and grievances, and of all correspondence with customers. In dealing with matters such as credit, he, of course, was to be guided by the decisions of the credit department, but no department other than the territorial sales department was to be permitted to communicate directly with individual customers except in the case of delinquent accounts to which severe collection methods were to be applied.

Questions

1. What difficulties did the Excelsior Paper Company have with its sales administration organized on a functional basis?
2. Do you think that the territorial (or divisional, Chap. IV) form of organization would improve the situation?
3. What new difficulties might come from the territorial specialization?

74. CUSTEN MANUFACTURING COMPANY

Sales Forecasting

The Custen Manufacturing Company produced two distinct types of merchandise. For each type there was a separate sales division with its own sales manager. In 1922 the company decided to install a system of complete budgetary control based upon planned sales for one year in advance, the system to take effect in 1923. The executives, therefore, desired to make use of a sound method of forecasting sales.

Three methods were considered: (1) By one method, the percentage increases of total dollar sales of the last year over

total dollar sales of the preceding year would be determined and this figure applied as a common increase to the dollar sales of each product for the current year. (2) By another method considered, the total dollar sales for the coming year would be estimated from a forecast of general business conditions and this total would be allocated to the several products according to expected conditions influencing sales of those products. (3) By the third method, detailed estimates in physical units of sales of each product would be made and these estimates then would be converted into values and the total dollar sales obtained.

The first method was based on the assumption that the trend of sales of each product was the same as the trend for total sales. This was known to be false, because conditions affecting sales differed for each product. Sales of some products were affected by style factors. Designs which proved popular would show tremendous sales increases for a time, and then, when the fashion ended, equally rapid decreases. Sales of the staple products changed at different rates and in different directions, although the trend for the group was upward. Furthermore, two new products had been added within the year, and sales of these should increase more rapidly than sales of any other product. Although this method of forecasting sales gave estimates by

EXHIBIT 1

ANNUAL SALES IN PHYSICAL UNITS OF SELECTED PRODUCTS OF CUSTEN
MANUFACTURING COMPANY, 1918-1922 INCLUSIVE

Year	Sales in physical units			
	Division X		Division Y	
	Line A, product 3	Line A, product 4	Product 1	Product 2
1918	129,714	94,968	13,606	2,937
1919	157,610	39,518	11,505	2,319
1920	112,324	74,173	12,400	2,452
1921	72,980	108,171	12,639	1,800
1922	60,000	145,960	19,437	2,749

products, it seemed to be founded upon a fallacious premise; hence, it was rejected.

The second method depended upon a forecast of general business conditions. Total sales in dollars for the ensuing year would be estimated by the application to the total dollar sales of the current year of a percentage of increase based on the trend of past sales and modified in the light of expected conditions of general business. It then would be necessary to determine sales by products. It was proposed that sales be estimated for each product and that these estimates then be adjusted so that their sum would equal the estimate for total sales.

The principal advantage of this second method was that the influence of general business conditions upon total sales could be measured more accurately than could the influence of general business conditions upon sales of the individual products. The executives deemed the method unsound, however, because it involved the use of a predetermined total which would compel more or less arbitrary adjustments of the derived parts. This process, the executives maintained, was an inversion of the logical process whereby the whole was developed from its constituent parts, wherein lay the variable limiting factors.

By the third method, each product would be studied carefully and a figure established for its probable sales during the following year, without reference to probable total sales. The estimated total for the year would be merely the sum of the figures for the several products. The perspectives of the estimators would not be distorted by any preconceived ideas of what the final total should be. The special conditions of changes in demand, price levels, and competition would be considered separately for each product and their probable effects upon sales determined. This would permit the sales manager of each division to make an independent estimate for his own division. The executives believed that this was the logical procedure, since the sales managers were in a position to know the possibilities of their products and the conditions which affected sales of those products. Moreover, when an estimate was made by a sales manager, the responsibility for its performance was upon the man who made the forecast. Thus the forecasts actually would be planned sales. The company decided to use the third method in estimating sales for the budget.

EXHIBIT 2

SALES ESTIMATES OF CUSTEN MANUFACTURING COMPANY FOR 1923
DIVISION X

Product	Sales for 1922 in physical units	Estimated percentage change for 1923	Estimated sales, 1923	
			Physical units *	Dollars †
Line A				
Product 1.....	271,200	+ 7.5	291,500	498,000
2.....	68,400	+10	75,200	139,200
3.....	60,000	-15	51,000	81,600
4.....	145,960	+20	175,200	190,800
Totals.....	545,560	....	592,900	909,600
Line B				
Product 1.....	151,200	+ 5	158,800	432,000
2.....	180,000	+15	207,000	368,400
Totals.....	331,200	....	365,800	800,400
Line C				
Product 1.....	18,000	+10	19,800	22,800
2.....	17,160	+10	18,900	18,200
3.....	1,680	+10	1,800	3,100
4.....	3,240	+10	3,600	4,800
5.....	102,000	+15	117,300	256,800
Totals.....	142,080	....	161,400	305,700
Line D				
Product 1.....	10,800	....	10,800	15,600
2.....	120	....	120	100
Totals.....	10,920	....	10,920	15,700
Line E				
Product 1.....	67,200	+25	84,000	464,400
2.....	145,200	+25	181,500	796,800
3.....	22,800	+163	60,000	265,200
4.....	45,600	+84	84,000	435,600
5.....	22,800	+25	28,500	148,800
Totals.....	303,600	....	438,000	2,110,800
Line F				
Product 1.....	1,800	+50	2,700	224,400
2.....	1,800	+50	2,700	190,800
Totals.....	3,600	....	5,400	415,200

* Expressed in round numbers.

† Based on prices estimated by budget committee.

The budgetary control adopted was complete; that is, it covered all phases of operation: purchases, production, sales, and

EXHIBIT 3

ACTUAL ANNUAL SALES OF CUSTEN MANUFACTURING COMPANY,
1918-1922 INCLUSIVE, AND PLANNED SALES FOR 1923

Year	Actual sales	
	Division X	Division Y
1918	\$2,857,228	\$1,937,927
1919	2,972,735	1,730,249
1920	4,311,542	2,831,965
1921	3,640,091	1,445,042
1922	3,916,411	2,194,163
1923	Planned sales	
	\$4,557,400	\$2,536,560

finance. Since physical quantities were the units used to measure purchases and production, and dollars were the units used in finance, it was necessary to express planned sales in both physical units and dollars, if the various operations were to be coordinated adequately.

The sales estimates could be made in terms of physical units and then converted into terms of dollar value, or the process could be reversed. The company had kept records of sales by physical units as well as by dollars. The executives decided that the original estimates should be made in terms of physical units. Such estimates would not have to consider probable variations in prices; whereas estimates in terms of dollars would have to consider variations both in quantities and in prices. Sales forecasts in physical units would be of more assistance in the planning of purchases and production than would forecasts on a price basis. The quantity estimates could be converted into dollar values by means of estimated selling prices for the physical units.

Accordingly, the sales manager for each division estimated in terms of physical units 1923 sales for each product in his divi-

sion. The figures were based upon the probable effect of general business conditions and the trend of sales as disclosed by data for the preceding five years. A five-year period was selected because it was of sufficient length to include a complete cycle of fluctuations in sales, and, consequently, to reveal the underlying trends. Sales data were compiled for each product as shown in Exhibit 1.

The sales manager did not employ mechanical means for forecasting increases, such as the application of the average rate of increase for the past five years to figures for the current year. Instead, the sales managers, on the basis of their judgments as to the influence of various current factors, and expected changes in styles, conditions of demand, prices, and competition, modified the trends disclosed by the sales figures for the five-year period. In this way, the sales managers arrived at percentages of increase or decrease for each product. These percentages were applied to actual sales for 1922 to obtain sales forecasts for 1923.

At the time the forecast was made, figures for only 11 months of 1922 were available. From these and past experiences, sales for the entire year were estimated and used as the basis of computation.

Estimated physical sales by products for 1923 then were submitted to the budget committee, which consisted of the president, treasurer, production manager, and the two division sales managers. This committee formulated estimates of the expected sales prices by products; the dollar sales then were computed by multiplying the estimated physical sales by the estimated prices.

The final results, in dollars, of the forecast, together with totals were summarized for Division *X* as shown in Exhibit 2. A similar computation was made for Division *Y*.

The final results, in dollars, of the forecast, together with totals of sales for each of the past five years, as a comparison, were arranged as shown in Exhibit 3.

Questions

1. Criticize the three methods of forecasting described, and indicate your recommendation as to the best way to estimate future sales.

2. What are the uses to which sales forecasts may be put?

75. RATTLESNAKE LUMBER COMPANY

Sales Management versus Industrial Management

The Rattlesnake Lumber Company was organized late in the nineteenth century by Mr. Grant and Mr. Evans, who had been pioneers in the lumber industry in the Pacific Northwest. The executive officers of the company for the most part were men who had been with the company since its inception and who, consequently, were advanced in years. In 1925, Mr. Grant, who, as president and treasurer of the company, had charge of sales and general administration, employed as his assistant a graduate of an eastern graduate school of business. Mr. Evans, the vice president, who superintended the engineering operation of the company, had no one as his understudy. He was considering, in 1927, employing a young man to relieve him of part of his work, which had become burdensome as a result of the increased size of the business and of his inability, on account of his age, to do as much engineering work as formerly. Increasing competition in the industry, moreover, had made Mr. Grant and Mr. Evans, in common with other pioneers in the industry, feel the necessity of securing new methods and adopting more aggressive policies.

The properties of the company consisted of a large area of standing timber, three logging units, and two lumber mills. The timber had been acquired when Mr. Grant and Mr. Evans had arrived in the West, and represented an excellent stand of commercial varieties adapted to economical logging. The logging units consisted of portable camps, small railroads, stationary engines, tractors, miscellaneous equipment, and a group of workmen ranging from lumberjacks to engineers. The mills were efficient manufacturing units which took the logs and transformed them into dimension lumber. The process required a large plant, complicated machinery, and a large staff of skilled and semiskilled workmen. A lumber yard was adjacent to the mills, in which the company stored its output ready for shipment. One of the mills was located upon the water, so that sea-going steamships could load at the company dock, which was part of the yard.

The sales activities of the company had become of increasing importance. Originally the market for northwestern lum-

ber had been small, as there were large and satisfactory supplies nearer the consuming markets. Then came a period, after the markets for northwestern lumber had expanded, when sales were made with little effort because of the relative cheapness at which it could be logged and milled, and because of the special adaptability of the principal variety produced, Douglas fir, to certain structural and interior uses. The time arrived, however, when the competition for markets became very keen; progressive sales methods and able executive administration of sales were required in order to operate successfully.

The Rattlesnake Lumber Company sold its products partially through its own retail lumber yards located in the population centers of the Pacific Northwest, and the rest to wholesalers and large chains of retail yards located in the more distant consuming markets. Several salesmen were employed, who called upon prospective customers and endeavored to increase the sales of the company's output. Occasionally a sale was made for export. The company advertised only in the local areas served by its own retail yards.

The duties of Mr. Grant, the president of the company, were both general and specific. He exercised general supervision, formulated major policies, and, in particular, directed sales. His early training had been in engineering, and for many years he had been active in the logging and milling properties. The increasing significance of marketing the lumber produced was recognized, however, and soon Mr. Grant found it necessary to assume the direction of sales, leaving the production and manufacturing activities of the company to his close associate, Mr. Evans. As sales manager, Mr. Grant kept in close touch with tendencies in the markets for lumber, made occasional calls upon important customers, and exercised general supervision over sales activities. He enjoyed meeting people, and made a good impression on prospective purchasers as well as on members of his organization.

The duties of Mr. Evans were almost entirely of a technical and an engineering nature. He maintained an intimate contact with the superintendents of the logging and milling units, directing the scale of their operations and assisting in the installation of new manufacturing methods and machinery; he took care of the forests owned, watched for advantageous opportuni-

ties to secure additional standing timber, maintained the quality of product desired, and endeavored to keep costs of operation at a minimum. He had not adopted many scientific management methods. A general idea of costs was known, but Mr. Evans had been satisfied with approximations. The volume and kinds of lumber produced were usually the same as those planned and desired, but the explanation lay in Mr. Evans' good judgment rather than in accurate operating schedules. While Mr. Evans was well liked, he was quiet in his manner, said very little, and was not especially interested in business outside of his engineering field.

Both Mr. Grant and Mr. Evans were over sixty-five years old, as were also the other company executives who might be eligible to take over their work. Prior to 1925, accordingly, there was no one in the office of either Mr. Grant or Mr. Evans who, in years, could be called a junior executive. Realizing the expansion of the business, their increasing years, and the need for more progressive policies, both of the original founders had seen for some time the necessity of securing junior executives.

In 1925, accordingly, Mr. Grant had employed, as his assistant and understudy, Mr. Dix. Mr. Dix had never been in the Far West and had had no experience in the lumber industry. He had graduated from an eastern college, where he had concentrated in economics, and subsequently had taken two years of work in a graduate school of business in the East. This training had acquainted him with business and business methods in various industries, and had impressed upon him the necessity of exercising superior judgment and resourcefulness in the successful administration of an enterprise. Mr. Dix spent the first six months of his employment becoming acquainted with the operations of the company and with the members of the organization. At the end of that period he was established in the office of the president, where he was given special assignments to perform. After two years Mr. Dix was contributing ideas in the management of the company which were proving to be of marked value. The other officers of the company liked him and cooperated with him; at no time had they evidenced any feeling of dissatisfaction because of him.

Mr. Grant had been especially pleased with the ideas presented by his assistant leading to more aggressive sales efforts

in the face of the increasing degree of competition in the industry. Mr. Dix had made a thorough analysis of sales, by product, type of customer, and by geographical division, so that sales effort could be exerted more intelligently than it had been previously. In addition, from statistics of the company and of the industry, and from trade notes, Mr. Dix, with considerable accuracy, had made forecasts of the volume of sales to be expected by the company. This had been of value in the determination of mill schedules.

Mr. Evans had watched with much interest the experiment in the sales office with a business-trained man. He was equally desirous of securing an understudy to assist him in the supervision of the engineering operations of the company. It was difficult for him to believe, however, that a graduate of a graduate business school would be able to work into his office as successfully as had Mr. Dix into Mr. Grant's office, on account of the specialized engineering knowledge required. The interrelation of the functions of the offices of Mr. Grant and Mr. Evans went no further than the coordination of the production and selling schedules. The functions of Mr. Evans' office dealt chiefly with the operation of the logging units and the mills. This involved decision as to the areas in which to do logging, determination of the volume of operations, selection and supervision of camp foremen and mill superintendents, satisfactory relations with labor and labor unions, setting of wage scales, transportation of logs, finding and use of costs, keeping of stock records, maintenance of quality standards, adoption of new methods, and various duties involving the production and manufacturing operations of the company.

In 1921 Mr. Evans had employed two graduates of the Forestry School of a leading western university. These men had had excellent records both in school and, subsequently, in the company. They had been apprenticed in the operations of the various properties of the company for two years, after which time one of them had been given the supervision of a logging crew and the other had been made chief timber cruiser. Mr. Evans had watched these young men carefully and had noted that they had shown unusually promising qualities. Each of them had an excellent engineering background. There seemed to be reasons for believing that either one of them could be

brought to Mr. Evans' office and be made his personal assistant to good advantage.

This conclusion, however, was not an obvious one. Mr. Evans realized that the competition in the industry was becoming such that production costs must be reduced in order to be at a competitive advantage in the industry. He had been impressed favorably by the use to which Mr. Dix had put his business training. It seemed to him that a business-school graduate, who had a background of training in subjects dealing especially with manufacturing and production, might have more ideas with regard to the attainment of lower production costs than one trained as a forestry engineer. The choice, in short, lay between such a man and one of the Forestry School graduates who had been with him for five years.

Questions

1. What training and personal qualities did Mr. Grant expect his assistant to possess in order that he might be of special value in developing sales?
2. What training and personal qualities should Mr. Evans look for in the man he chooses as his assistant?
3. Is there any significant quality which each of the assistants to the two senior executives should possess in common?

76. SUCROSA SUGAR REFINING COMPANY

Sales Promotion by Advertising

Prior to 1911, sugar was sold in bulk only. The cane sugar of one refinery generally was indistinguishable in quality and taste from that of any other cane-sugar refinery. The margin of profit for refineries was small; occasionally competition and fluctuations in prices of raw sugar destroyed the profit altogether. None of the refineries conducted consumer advertising for bulk sugar.

With the introduction of packaged sugar in 1911, the American Sugar Refining Company began a campaign of national advertising to develop its Domino brand of sugar and syrup. Like several other refiners, however, the Sucroza Sugar Refining Company, although it sold sugar in packages, decided not to advertise to consumers. In 1924 the differential in price between

bulk and packaged sugar was increased, and the question of advertising again was brought to the attention of the management of the Sucrosa Sugar Refining Company.

The plant of the Sucrosa Sugar Refining Company was in New York, on the Hudson River. The company produced approximately 5% of the total sugar consumed in the United States. Ninety per cent of the company's production was consumed in the North Atlantic and New England states. The company sold two-thirds of its production to wholesalers and chain-store companies and one-third to industrial users, such as confectioners, bakers, ice cream manufacturers, and soft drink manufacturers. The minimum order which the company accepted was 100 barrels a month. In 1923, 12% of the company's total production was sold in packages, and in 1924, 12.5%. Exhibit 1 gives the company's production and sales for 1923 and 1924.

EXHIBIT 1

PRODUCTION AND SALES OF SUCROSA SUGAR REFINING COMPANY,
1923 AND 1924

(In pounds)

	1923	Proportion of total net sales, percentage	1924	Proportion of total net sales, percentage
Total production.....	415,231,000	100.0	473,631,000	100.0
Sold in bulk.....	365,403,000	88.0	414,427,000	87.5
Sold in packages.....	49,828,000	12.0	59,204,000	12.5
Sold to manufacturers.....	138,410,000	33.3	157,877,000	33.3
Sold to wholesalers (total).....	276,821,000	66.7	315,754,000	66.7
Sold to wholesalers (bulk only)...	226,993,000	54.7	256,550,000	53.7

The company's six salesmen spent 90% of their time in the sales office, keeping customers informed of market changes by telephone and correspondence. The larger purchasers came into the office to obtain information and to place orders, while the smaller ones usually placed orders by telephone, telegraph, or correspondence. Occasionally, salesmen visited wholesalers and manufacturers for the purpose of establishing better relations; some orders were received in this way. Price changes made by any refinery generally were met by competing refineries within

a short time. Sales in the sugar trade depended largely upon the personal relations between salesmen and customers and upon the service given.

Customers were allowed to place orders 30 days before delivery and were billed at the market price when the orders were placed. Wholesalers occasionally sold the sugar to retailers at the billed price to themselves, taking only the 2% cash discount allowed by the manufacturer. Retailers usually took a small mark-up on sugar. Ordinarily, wholesalers and retailers both estimated that they sold the item at a net loss.

In 1911, the American Sugar Refining Company had begun to sell sugar in one-pound, two-pound, and five-pound packages under the trade name "Domino." This policy soon had been followed by other large sugar companies, including the Sucrosa Sugar Refining Company.

Refineries sold sugar on a basis of 100-pound bags. With the development of trade-marked packages, the refineries had adopted the policy of charging a differential of 40 cents per 100 pounds on sugar in packages. When this differential was introduced, the companies had expected that it would cover the cost of packaging, but by 1923 they had discovered that, while it did cover the direct cost of packaging, it did not absorb the extra overhead cost. In 1924, consequently, the differential had been increased to 60 cents, which was sufficient to cover the overhead cost and the direct cost of packaging. Consumers appeared to be unwilling to pay more than one-half cent a pound extra for sugar in packages.

Of the sugar consumed in the United States, approximately 15% was beet sugar and 85% cane sugar. In 1924, about 42 companies were operating 100 factories for the production of beet sugar, and about 12 companies on the Atlantic Coast and 2 on the Pacific Coast were refining cane sugar. During the period from 1911 to 1925 the Sucrosa Sugar Refining Company, which never had advertised its product, had increased its percentage of total production from 1 to 5%.

The Sucrosa Sugar Refining Company contemplated the advisability of making an appropriation to carry on consumer advertising of packaged sugar in 1925 similar to the advertising done by the American Sugar Refining Company. The Sucrosa Sugar Refining Company had not made any profit since 1922,

largely because of the extreme fluctuations in prices of raw sugar and the keen competition among refineries. The reports of the American Sugar Refining Company indicated that advertising tended to increase its sales of packaged sugar more rapidly than its sales of bulk sugar increased. If the Sucrosa Sugar Refining Company were to have increased its sales of sugar in packages, it would have found it necessary to purchase additional packaging equipment.

Questions

1. Should the Sucrosa Sugar Refining Company have undertaken to advertise its packaged sugar?
2. What are the characteristics of a commodity which adapt it to being sold to advantage under a brand?

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